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Mongolia
Poverty Assessment

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Poverty Reduction and Economic Management
East Asia and the Pacific Region

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CURRENCY AND EXCHANGE RATES

Currency Unit – Mongolian Tugrug
Exchange Rate (as of January 3, 2006)
Tugrug:US$ = 1176: 1

FISCAL YEAR

January 1 – December 31

WEIGHTS AND MEASURES

Metric System

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Abbreviations and Acronyms

ADB	Asian Development Bank
CIS	Commonwealth of Independent States
CMP	Child Money Program
COMECON	Council for Mutual Economic Assistance
CSO	Civil Society Organization
DevInfo	Development Information
EASHD	East Asia Region's Human Development Department (at the World Bank)
EGSPRS	Economic Growth Support and Poverty Reduction Strategy
GAP	Governance Assistance Project
GDP	Gross Domestic Product
GFMIS	Government Financial Management Information System
HIES	Household Income and Expenditure Survey
ICT	Information and Communication Technologies
IMF	International Monetary Fund
LSMS	Living Standard Measurement Survey
MDG	Millennium Development Goals
NGOs	Non Governmental Organizations
NSO	National Statistical Office
OLS	Ordinary Least Squares
OSF	Open Society Forum
PMMS	Poverty and MDG Monitoring and Assessment System
PPNs	Poverty Policy Notes
PRG	Poverty Research Group, Ministry of Finance
PRR	Poverty Risk Ratio
PRSP	Poverty Reduction and Strategy Paper
PSMFL	Public Sector Management and Finance Law
PSUs	Primary Sampling Units
RICS	Rural Investment Climate Survey
Tg	Tugrug
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WB	World Bank

Preface

This Poverty Assessment consisted of a program of activities during the last 18 months that can be classified into three stages:

- The first stage consisted of utilizing the first nationally representative household survey, HIES/LSMS 2002-3, released in November 2004, to produce seven short and easy-to-read poverty policy notes (PPNs) on poverty-related policy issues seen as high priority for the country. The objective was to inform the policy discussions taking place in the country, making timely use of the information from the survey.
- The second stage consisted of a structured policy dialogue around these PPNs during 2005. These PPNs were presented to the Government, interested members of parliament, civil society, and donor community during June 21-24, 2005 in Ulaanbaatar in workshops, forum, and individual meetings.
- The third stage consisted of writing a draft Poverty Assessment based on the feedback received on the PPNs and additional information yielded by a public expenditure tracking survey for education, a participatory poverty assessment, and an assessment of a flagship program for providing cash support to needy households. The draft poverty assessment was presented to the academia, research institutes, private sector organizations, donors, and civil society, in early 2006, and this revised report incorporates the comments and suggestions received during these consultations.

During the first stage, the World Bank provided technical assistance to the National Statistical Office to process HIES/LSMS 2002-3 data; construct consumption aggregates and baseline poverty line; and estimate poverty measures. The output was the joint NSO-WB-UNDP report on baseline poverty information including both poverty measures and poverty profile from the first nationally representative survey. During the first phase, the Poverty Assessment team completes seven PPNs drawing heavily from the HIES/LSMS 2002-3 data.

During the second stage, the flagship activity was the June 2005 workshop co-organized with the Office of the Prime Minister, at which officials from line Ministries, the Prime Minister's Office, and Members of Parliament who served in various Standing Committees were invited to be discussants of the seven PPNs. We gratefully acknowledge the invaluable feedback and suggestions from the discussants and other participants at the workshop. Useful feedback was also received from donors and non-Government entities. In particular, we thank UNDP, WHO, and UNICEF staff for their written comments. Many participants in these deliberations acknowledged the value added of frontally addressing multi-sectoral themes in a formal poverty assessment. Findings from the PPNs were also published in the August 2005 edition of the newsletter of the Poverty Research Group of the Ministry of Finance.

During the third stage between July and December 2005, to address the suggestions raised during the consultations in the second stage, the team carried out additional in-country information gathering. Principally, the work consisted of the Public Expenditure Tracking Survey for Education, analytical work on the new Child Money Program, and the Participatory Poverty Assessment done jointly with the Asian Development Bank. Findings from each of these activities are published in separate reports with main findings highlighted in this Poverty Assessment. The draft Poverty Assessment, which updated and pulled together the findings of the PPNs, was presented to the civil society, research community, private sector, and donors during January 17-19, 2006 in Ulaanbaatar. We would like to thank the Open Society Forum, in particular, for hosting a roundtable discussion of the draft report and invited participants from the civil society, academia, research institutes, and private sector organizations. This revised report benefits from comments and suggestions from the January 2006 discussions.

Acknowledgements

This report was prepared under the guidance and support of David Dollar, Indermit Gill Sudarshan Gooptu, and Homi Kharas. The team consists of Bank staff from EASPR, EASHD, EASEN, EACMF, DECDG, and PRMPS. Chapter 1 and 2 were written by Chorching Goh. Chapter 3 was written by Shubham Chaudhuri. Chapter 4 was written by Chorching Goh, with inputs from Susana Cordeiro-Guerra, Charlie Abelmann, Gerelmaa Amgaabazar (Public Expenditure Tracking Survey) and Gita Steiner-Khamsi (Public Expenditure Tracking Survey). Chapter 5 was written by Chorching Goh, with inputs from M. Caridad Araujo (Child Money Program). Chapter 6 was written by Elisa Muzzini and Salvador Rivera, with inputs from Chorching Goh and Robert van der Plas. Chapter 7 was written by Stephen Ndegwa and Verena Fritz, with inputs from Makiko Harrison (poverty monitoring system). Chapter 8 was written by Chorching Goh. Annex IV on poverty monitoring system was written by Makiko Harrison.

Martin Cumpa provided superb research assistance. Contributions and inputs from Yusuf Ahmad, L. Ariunchimeg, Oyunbileg Baasanjav, Uranbileg Batjargal, Cristobal Cano-Ridao, Uuganbileg Erdene, Bolor Legjeem, Akihito Matsui, Yasuyuki Sawada, Sofia Sebastian, and G. Urantsooj are gratefully acknowledged. Assistance and support from the Mongolia Country Office, in particular Saha Meyanathan, Tsolmon Bat-Ochir, Altantsetseg Shiilegmaa, Otgonbayar Yadmaa, Saruul Artsat, Bolormaa Gurjav, and Erdenebayar Chuluunbaatar have been invaluable.

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EXECUTIVE SUMMARY

This poverty assessment for Mongolia provides recent trends in monetary and non-monetary aspects of poverty and establishes baseline poverty information based on the first nationally representative household survey; analyzes poverty related issues in selected sectors — livestock, education, and energy — to inform implementation of the government's programs and long-term strategy; and discusses cross-cutting issues — social assistance programs and institutional weaknesses —that are relevant for poverty reduction. Analyses in the report utilize primarily the most recent (2002) household survey data but also draw upon the joint report on poverty estimates and profile (by the National Statistical Office, UNDP, and the World Bank), the joint report of participatory poverty assessment (by the National Statistical Office, ADB, and the World Bank), various publications of donors and NGOs and World Bank sectoral reports (e.g., Public Expenditure Tracking Survey Report and a Policy Note on the Child Money Program).

I. Facts

Both monetary and non-money-metric poverty has fallen in recent years.

Monetary and non-monetary indicators from household surveys, as well as external sources of data, indicate that poverty fell by about 7 percentage points from 43 percent to 36 percent between 1998 and 2002. Between 2002 and 2005, estimates indicate that poverty reduction has continued though, in the absence of household surveys during the last four years, this result should be interpreted with caution.[1] During the period 1998-2003, living standards rose markedly—access to electricity and water rose by 50 percent, and ownership of selected consumer durables doubled. Primary and secondary enrollment rates rose by 10 percentage points.

Headcount poverty declined between 1998 and 2005.

The most commonly used monetary indicator of poverty, viz., consumption-based poverty headcount, has been difficult to compare between surveys because the survey design and country coverage differ across years. Official poverty estimates published for years 1998 and 2002 are not comparable because they were based on different geographical coverage, inconsistent consumption aggregates, and incompatible poverty lines. This report makes an attempt to construct a closely, albeit imperfectly, comparable consumption aggregates based on the 2002-2003 Household Income and Expenditure Survey (HIES) and Living Standards Measurement Survey (LSMS) and the 1998 LSMS. Based on a subset of consumption aggregates and a subset of household samples from 9 out of 22 *aimags* (administrative units) of the country, per capita household consumption increased for all across the distribution between 1998 and 2002-2003 and on average rose by 18 percent. Extrapolation based on the subset of

[1] 2002 is the latest year of Mongolia's Living Standards Measurement Survey.

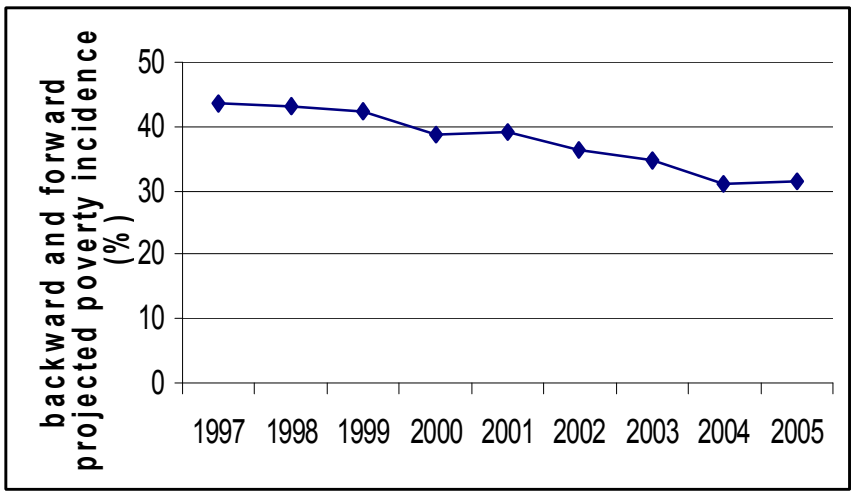
sample to the entire country suggests that national poverty incidence fell during this period from 43 percent to 36 percent. Another approach using simulations based on macroeconomic data also indicate a similar magnitude of fall in national poverty incidence between 1998 and 2002. Forward projections based on macroeconomic data of sectoral GDP and employment growth rates suggest that poverty incidence continued to be on the decline, falling modestly to 32 percent by 2005, (Table 1 and Figure 1).

Table 1: Trends in poverty incidence differ across estimates: non-comparable official numbers and comparable estimates, 1998-2002

Case	Samples are constructed from	Poverty Incidence (%)		Poverty Line in 2002 prices (Tg/mth/person)	
		1998	2002	1998	2002
I [official estimates]	(a) **non-comparable** consumption aggregates between 1998 and 2002; (b) **different coverage** of the country in 1998 and 2002; and (c) **inconsistent** poverty lines across time	36.3	36.1	various	24,743
II	(a) **comparable** consumption baskets; (b) **coverage of all** aimags; and (c) **consistent** poverty lines	43.1	36.1	24,743	24,743

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: The nine aimags sampled in both 1998 and 2002 are UB, Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol. Case I consists of official and published poverty numbers for 1998 and 2002.

Figure 1: Poverty incidence projections based on macroeconomic data show a steady decline between 1997 and 2005



Source: HIES-LSMS 2002-3 and *POVSTAT* projected estimates, based on sector-specific output and employment growth rates.

Living standards have improved for the poor.

Based on national surveys, non-monetary indicators of living standards such as infant mortality and access to such basic services as physicians, water supply and bath houses improved, and the share of population owning consumer durable goods such as vehicles also increased. The proportion of working children and correspondingly, the proportion of out-of-school children fell during this period. Access to water and electricity increased more for the poor than for the country as a whole, and school enrollment rose at least as much for the poorest 40 percent of the population as for the average Mongolian. Other sources of information also suggest improvements of living standards. Statistics from the Food and Agriculture Organization indicate that meat consumption rose from 230,000 metric tons in 1990-94 to 240,000 metric tons in 1995-98, to 263,000 metric tons in 1999-2002. Cereal consumption rose from 260,000 metric tons in 1990-94 to 285,000 metric tons in 1995-98, to 314,000 metric tons in 1999-2002.

36 percent of the population—or about 900,000 people—were still poor in 2002.

The HIES-LSMS 2002-2003 was the first and most recent household survey that covered the entire country. All 22 administrative units were sampled, compared to only 9 administrative units sampled in 1998. Further, there were many more consumption items surveyed in 2002-2003, with over 300 items versus fewer than 100 items in LSMS 1998. (Table 2) Based on this comprehensive consumption basket of basic needs, consisting of a food basket that provides 2,100 calories per person per day and a basket of non-food spending inclusive of housing and energy consumption, about 36 percent of Mongolia's population was classified as poor in 2002 with a poverty line of Tugrug 24,743 per month per person in 2002 prices that approximates 1993-Purchasing Power Parity adjusted US$1.74 a day or 2002 current market exchange rate of US$0.73 a day.

Table 2: The 1998 and 2002 household surveys differed in several aspects

	1998	2002/03
Survey	LSMS	HIES + LSMS
Field Period	June-July	February 2002 – July 2003
Sampling		
Frame	Government classification of 6 regions based on petrol prices: Western, Middle, Eastern, Southern, Central excluding UB, and UB.	2000 National Census
National Representativeness	Uncertain	Yes
Coverage	UB + 8 aimags	UB + 21 aimags
Sample (households)	2000	3308
Questionnaire		
Questionnaire per household	1	4
Num of food items	40	92
Recording method (food)	Recall of last month	Diary covering a 3-month period
Num non-food items	56	242
Recording method (non-food)	Recall of last month and last 12 months	Diary covering a 3-month period

The poor tend to be rural, depend on livestock, have more children but only lower secondary or less schooling, and spend a large part of their incomes on heating.

There was considerable variation in poverty rates across the country. Rural areas had a poverty incidence of 43 percent compared with 30 percent in urban areas. More than half the population in the West was classified as poor, about twice the rate in Ulaanbaatar. Herder households constituted the single largest group amongst the poor, and of all households with household heads engaged in some form of economic activity, herder households have the highest incidence of poverty. A composite profile of a poor Mongolian is a person who lives in rural areas, has many children, works with livestock, and has lower secondary or less education. Unlike other countries, poor Mongolians spend an exorbitant amount of their incomes on heating during long and harsh winters.

II. Sector-specific challenges

Based on the poverty facts as well as extensive in-country consultation, the most pressing poverty challenges in Mongolia are related to widespread livestock mortality risks, attrition before upper secondary schooling, and exorbitant heating burden. The bottleneck in Mongolia's education sector is the transition between lower and upper secondary level and the gap of attrition rates is particularly acute between the non-poor and the poor. Mongolia, unlike other low-income country where the consumption basket of the poor consists of primarily food, devotes over half of its consumption to non-food needs in which heating constitutes a significant share. The report devotes a chapter each to investigate pressing challenges related to the livelihood, skill, and

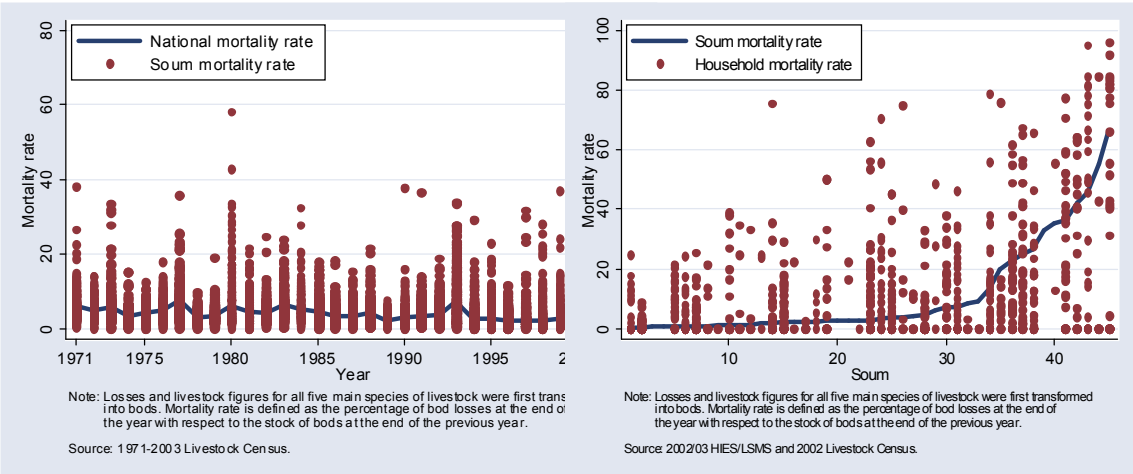
consumption needs of the poor — these imply, respectively, selected issues in the livestock, education, and energy sectors.

Livestock

Mortality risk is widespread and idiosyncratic or localized shocks are prevalent; the remedy involves both risk reducing measures and targeted coping strategies.

Nearly a third of Mongolia's population lives in households that rely on herding as the primary source of livelihood. Livestock mortality risk is widespread, and mortality shocks negatively affect consumption and well-being of herder households. While shocks, such as widespread *dzuds* or drought are undeniably an important source of livestock mortality, idiosyncratic or highly localized factors are also critical factors in determining the incidence of livestock mortality at the household level. (Figure 2) Policies to help herder households have to go beyond interventions or responses that are triggered by catastrophic events, and should include both *ex-ante* risk-reducing measures and *ex-post* coping schemes that are targeted at the household level. However more data, analysis and research are needed to inform the design of such policies.

Figure 2: Livestock mortality rates are influenced by highly localized or idiosyncratic shocks



A quarter of the herders has unsustainably small herd size and is chronically poor; they need to be persuaded to pursue other livelihood options.

There appears to be a group of chronically poor herder households (26 percent of total herder households), distinguished by large families and very small herds, for whom supplementary and/or alternative sources of income need to be identified and developed.

This will require improving rural investment climate and strengthening supply chains for livestock-based activities to promote non-herding job opportunities. The option of a

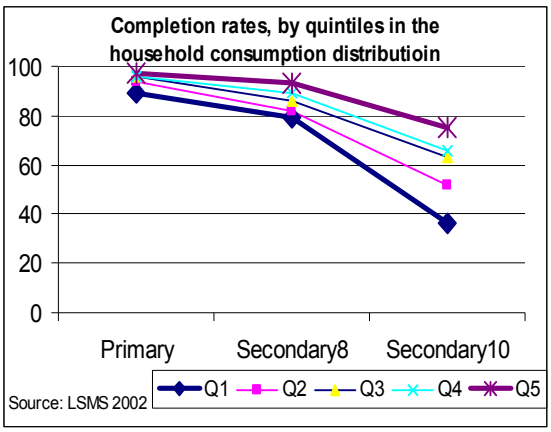
well-designed buyout program to make these herders leave the sector for good to pursue other livelihood could also be considered.

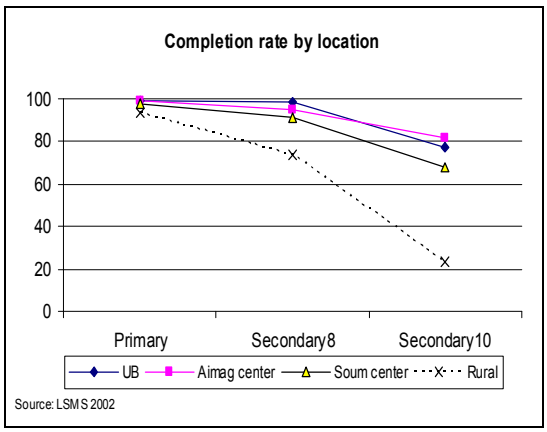
Education

The problem is mainly rural: children tend to be left out of upper secondary schooling because of a combination of lack of access, poor educational quality, and poverty.

Despite progress in school attendance in the past few years, rural students are still at a disadvantage. In particular, rural students do not have equal access to upper secondary education because rural schools shut down grades 9 and 10 during the 1997 reorganization and rationalization reform, while *aimag* center schools have only limited spaces. Attrition rates are significantly higher among rural children, and educational quality, measured by exam results, is significantly worse in rural schools. Poverty directly, through out-of-pocket and opportunity costs, and indirectly, through parental background, contributes to dropout. Rural students who tend to perform worse and drop out after the 8th grade are highly likely to be poor. This attrition or dropout raises concern given its long term implications from the vicious cycle or inter-generational transmission of poverty. (Figure 3)

Figure 3: Poor and rural children tend to drop out precipitously after lower secondary (Grade 8)





Aligning incentives for teachers and revising resource allocating formula to favor rural schools, and targeting public assistance directly can help poor rural children.

An assessment of the outcomes from the rationalization and reorganization reform will be necessary. For all the good intentions it may have, the rationalization and reorganization effort seems to perpetuate the widening gaps in educational outcomes between urban (*aimag* center) and rural (*soum*) schools. Very importantly, incentives embedded in the compensation schemes should be aligned to attract teachers and staff to rural schools and central resources be allocated to favor rural schools. Options to improve access for rural children should be considered and pursued; they include reopening grades 9 and 10 in rural schools; expanding dormitory spaces in *aimag* schools; and targeting dormitory subsidies and cash transfers at poor rural households.

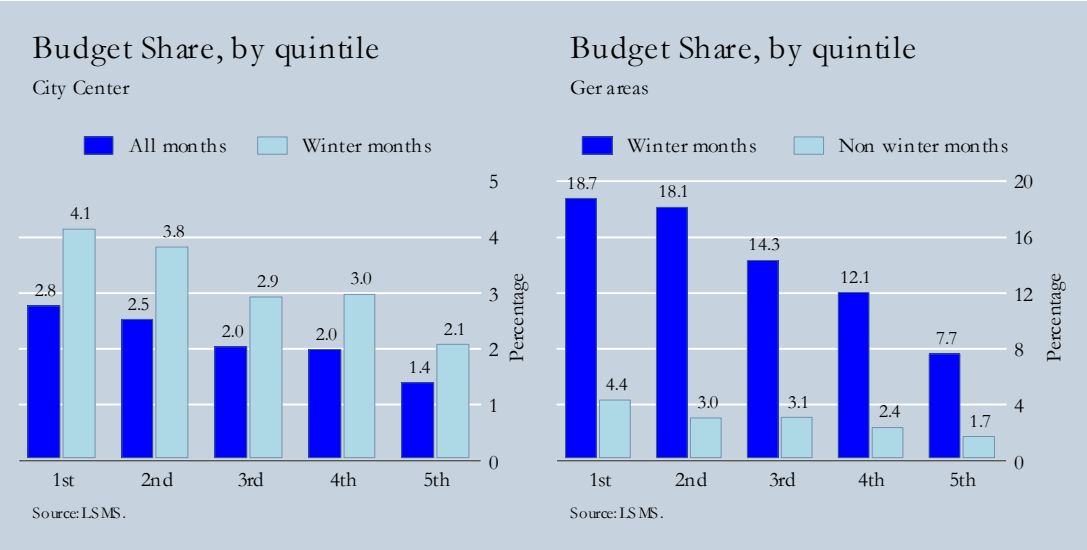
Energy

The problem is mainly urban: heating expenditure is an acute problem for Ulaanbaatar poor ger households.

In most poor countries, basic food makes up the bulk of consumption (over three-quarter) for their poor populations. However, a reasonable basket of minimal needs in Mongolia consists of only 44 percent food items and 56 percent non-food items in

which heating need is a significant component. Despite its claim or intention, the existing system of subsidies in the energy sector is not targeted at poor or vulnerable consumers. Mongolia's population has relatively good access to electricity, although there is insufficient generating capacity in many rural areas. While the authorities have primarily focused on electricity, it is not a poverty-related concern but instead, heating is. Given the harsh winters, the poor in Ulaanbaatar easily spend at least one-fifth of their total consumption over winter months on heating fuels which are primarily dirty fuel. The social costs of dirty fuel (e.g., health costs, productivity losses and environmental damage) are huge, justifying some forms of public-sector intervention. (Figure 4)

Figure 4: The poor in Ulaanbaatar ger areas bear a high heating burden during the winter months



A one-time trading-in of inefficient stoves for efficient stoves can address both heating needs of the poor and negative externalities of pollution from dirty fuel.

To address the heating needs of the poor, the report recommends a scheme for trading in inefficient stoves in exchange for efficient stoves in the *ger* districts of Ulaanbaataar. This trade-in scheme has to be implemented with an information campaign about the benefits of efficient stoves. In particular, the poor must recognize the significant cost-saving from sustained reduction of heating fuel from an efficient stove. The total estimated costs of distributing efficient stoves are about $3.2 million to poor *ger* households, a relatively cost-effective way of addressing both heating needs of the poor and negative externalities from burning dirty fuel for the next 8-10 years (a stove's lifetime). To target only at the poor, the authorities can make this trade-in scheme a public works project whereby efficient stoves are given out in exchange for a fixed hours of community service, such as garbage collection and street sweeping in the *ger* districts in addition to the requisite of trading in an existing inefficient stove. To discourage continued production and sale of inefficient stoves, the authorities also need to heavily levy a tax on inefficient stoves and subsidize efficient stoves.

III. Cross-cutting Issues

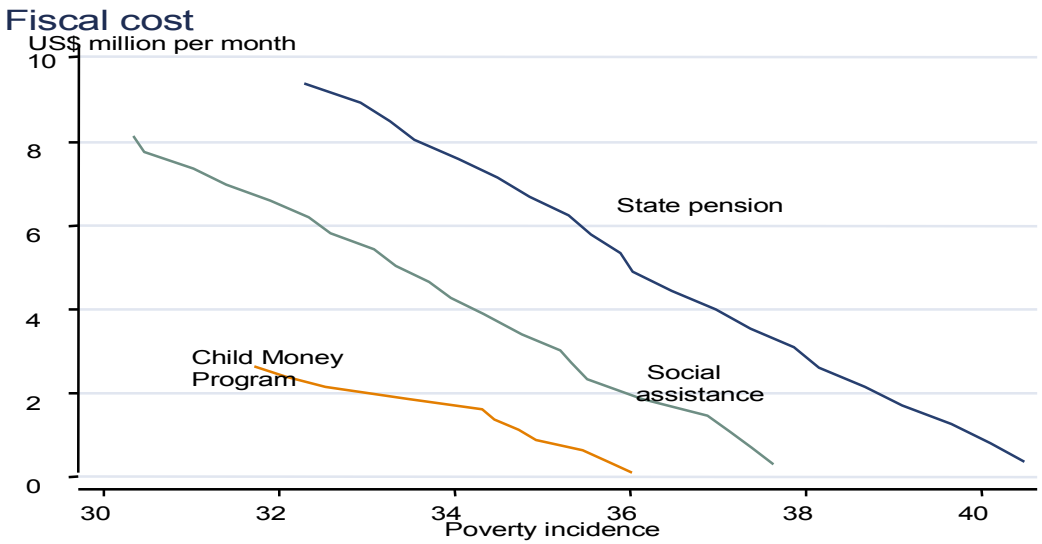
One common issue across the various sectors is that public assistance in the forms of cash transfers among herders, tariff-subsidy schemes in the energy sector, or dormitory subsidies in the education sector are not effectively targeted at the poor. Often, the better-off households are the primary beneficiaries or are recipients of a phenomenal share of the benefits. The report devotes a chapter each to examine the effectiveness of public actions for poverty reduction, namely social assistance programs, and overall governance and institutions, respectively.

Social Assistance

Social assistance programs do not particularly benefit the poor because of large leakage to the non-poor and substantial exclusion of the poor.

Mongolia's extensive system of social safety nets costs about 7 percent of GDP a year, of which 40 percent is devoted to social assistance for the poor and the vulnerable. In particular, the social assistance program that intends to benefit vulnerable population suffers from high levels of leakage (i.e., benefits to wealthier households) and exclusion (i.e., limited coverage of poor deserving households). The new Child Money Program is the very first proxy means-tested program in Mongolia but regrettably the Mongolian Cabinet is planning to make the Program universal or un-targeted, just as this report is going to print. While there may be political gains in making the CMP universal, this reversal perpetuates the existing problems of costly social assistance with little impact on poverty alleviation. Even state (old age) pension, which theoretically covers all who worked for a certain number of years during the era of planned economy, still does not reach a substantial proportion of the poor elderly. As a result, neither state pension nor social assistance has a significant impact on poverty reduction. In the absence of state pension and social assistance, national poverty incidence would rise by only 10 percent, while saving the Government US$7 million a month. (Figure 5). Nevertheless, the extreme poor do benefit from public transfers which constitute a significant percentage of their household consumption.

Figure 5: State pension and social assistance programs are not particularly pro-poor



A universal campaign to register and distribute a smart national identity card, free of charge to all will remove a stumbling block for the poor to access public assistance.

One barrier to reaching the poor is that most of the poor cannot afford to get an up-to-date national identity card which is a stringent requirement for *all* government services. In view of the importance of a national identity card in a Mongolian society, from school registration to healthcare access to application for public assistance, this report recommends (a) making the national identity card one with a smart chip that stores important particulars of the individual; and (b) launching a country-wide campaign, with mobile registration stations to rural areas, to register and distribute a smart chip-embedded national identity card to everyone free-of-charge. It's important to recognize that this registration campaign must reach out to the poor in remote locations and the vulnerable (e.g., the street children, and poor migrants) who otherwise will not be able to obtain an up-to-date national identity card to access basic services and government assistance.

Institutions

Governance and institutional weaknesses underlie failures of sector-specific policies as well as social assistance programs in reaching the poor.

This problem is related to governance and institutional weaknesses such as inconsistent policies, poor implementation, weak government leadership in donor coordination, politicization of civil service, and lack of transparency. Addressing these cross-cutting issues frontally will overcome some of the poverty challenges in the sectors. For example, strengthening implementation and enhancing transparency of execution of social assistance programs and subsidy schemes, the Government can reduce herder vulnerability and improve educational opportunity for poor rural students.

More attention should be given to implementation and consistency of policies, reducing turnover of civil service after elections, and better donor coordination.

Implementation is lacking in many policy areas, and the lack of donor coordination has exacerbated this problem. There appears to be too much emphasis on prestige-projects or large-scale changes and too little attention to mid-level reforms that allow effective governance for poverty reduction at the grassroots level. Given the level of development and the level of social support the state provides, Mongolia's fiduciary performance in these areas is considered good: cash is getting to the beneficiaries. The problematic aspect is public procurement. An inordinate power is placed in one person, the State Secretary for Finance. Finally, one area of concern remains the governance implications of high dependence on revenues from natural resource extraction. The report recommends that: the government put a greater emphasis to implementation and consistency of policies; efficacy and transparency; reduction of civil service turnover after elections; and stronger leadership in donor coordination.

IV. Principal Policy Recommendations

In summary, the main policy recommendations arising from the analysis in and discussions related to this poverty assessment are:

- ***Ensure consistent and comparable poverty estimates in subsequent years.*** Future household surveys must have a similar design as the HIES-LSMS 2002-3 to ensure comparability. Equally importantly, data should be made available to the public to encourage open dialogue and constructive debate on poverty issues.
- ***Assist those relying on livestock to cope with risk, raise productivity, or move to more sustainable livelihoods.*** Policies to help herder households have to include both *ex-ante* risk-reducing measures and *ex-post* targeted coping schemes. Furthermore, for the chronically poor herders distinguished by large families and very small herds, supplementary and preferably alternative sources of income need to be identified and developed.
- ***Address weaknesses in implementation to improve targeting of national social safety net programs.*** First and foremost, the Government needs to register and provide, free-of-charge, a National Identity Card to every citizen and in particular, the extreme poor. The report recommends that a smart chip-embedded National Identity Card be given out, through a universal campaign with mobile registration stations to rural areas, to register all citizens.
- ***Remove rural bottlenecks in the transition between lower and upper secondary education.*** Education sector incentives have to be better aligned to attract teachers and staff to rural schools. Resource-allocating formula needs to be revised to favor rural schools while outcomes from the rationalization and reorganization reform of 1997 should be assessed. In addition, government assistance in the form of cash transfers and dormitory subsidies have to be targeted at poor households.

- ***Provide incentives to improve heating practices of the urban poor.*** In the energy sector, the critical poverty issue is the high heating burden for Ulaanbaatar poor *ger* households. One cost-effective way to address heating needs of the poor and environmental damage from dirty fuel is to distribute efficient stoves to poor households in Ulaanbaatar *ger* areas in exchange for their existing inefficient stoves and their labor in some public/community work. Furthermore, inefficient stoves, which are cheaper, will have to be taxed whereas efficient stoves, which are more expensive, have to be subsidized to discourage production of the former.

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Chapter One: Poverty Trends, Data Transparency and Survey Comparability

- Projections based on macroeconomic data indicate that poverty headcount has declined between 1998 and 2005. Projected poverty incidence fell from 43 percent in 1998 to 36 percent in 2002, and further to 24 percent in 2005.
- Because of the significant design differences between LSMS 1998 and LSMS 2002, official estimates of poverty based on the respective survey data in their entirety are not comparable. In particular, the official estimates of poverty incidence in 1998 and 2002 have been based on (a) different coverage of the country; (b) incompatible set of consumption items; and (c) inconsistent poverty lines.
- Based on sub-samples, covering 9 out of 22 aimags of the country, with a compatible but a reduced list of consumption items, and one (comparable) poverty line, we find that real household consumption rose and poverty incidence fell between 1998 and 2002. Other socio-economic indicators, from school enrollment to access to basic services to ownership of assets, also suggest that living standards improved during this period in which the economy grew at a cumulative rate of 10 percent.

Background

Mongolia is a sparsely populated country with a vast land area of 1.6 million square kilometers which is larger than the combined area of France, Germany, Italy, and the UK. It is land-locked between Russia and China. Its small population of 2.75 million (in year 2004), about 60 percent the size of Singapore's population, is still under-stating the emptiness of the country since about half of the population live in Ulaanbaatar, the capital city. Mongolian climate is extremely harsh with very long and cold winters and dust storms in the spring. Its geography is dominated by grassy steppes, mountains, and vast desert and semi-desert regions with less than one percent of its land classified as arable. The country supports a livestock population of 28 million (in year 2004).

Mongolia's recent history has been influenced deeply by its two large neighbors. Mongolia won its independence from China in 1921 with Soviet backing, and a pro-Moscow regime was installed in 1924. Before 1990, while Mongolia was a relatively poor country, there was little appreciation and discussion of issues of poverty. This reflected a number of factors, including high and stable levels of employment, a relatively low degree of inequality in the distribution of income, and subsidized services such as extensive system of boarding schools, childcare facilities, and healthcare. During the socialist era, there have been significant gains in an expanded health and education coverage to the entire population, resulting in high male and

female adult literacy rates, universal primary enrollment ratios, universal vaccination rates, falling infant mortality rates and increased life expectancy.[2]

Early years of the transition

The collapse of the former Soviet bloc at the end of 1989 marked the beginning of the transition era for Mongolia: its first multiparty elections took place in 1990, and a new constitution was introduced in 1992. Mongolia has enjoyed a number of advantages at the outset of its transition. These include continuity as a state, absence of ethnic or other forms of conflict (which have affected a number of the poorer CIS countries – Moldova, Armenia-Azerbaijan, Tajikistan, Georgia; as well as the Western Balkan transition countries), a level of human capital which exceeded its economic level of development, and the presence of state-structures (i.e., public administration, public education and health system) throughout the country. Mongolia's disadvantages at the outset of transition included its high dependence on external subsidies (which accounted for one-third of Mongolia's GDP) and COMECON advisors policy making and running the country; collapse of established patterns of trade; a relatively narrow economic base; and isolation (e.g., a deliberate neglect of transport links with China).

Mongolia began a series of economic reforms in the process of a rapid transition from central planning to a market-oriented economy. In 1991 Mongolia became a member of international financial institutions, such as the World Bank and the International Monetary Fund (IMF).[3] Reforms adopted by the government include price and trade (tariff) liberalization, large-scale privatization of public sector asses in retail sector and livestock herding, reduction of budget transfers and lending to state enterprises, floating exchange rate, establishment of two tier banking system, tight monetary and fiscal policies against inflation, and introduction of investment-friendly legal system.

The early years of transition were marked by plummeting national income, soaring inflation, unprecedented unemployment, falling social spending, collapsing industries, and soaring poverty. Between 1990 and 1993, the economy contracted by over 20 percent of GDP, and annual inflation rate peaked at 325.5 percent in 1992. Unemployment, hitherto virtually non-existent, jumped to 20 percent and social indicators, e.g., school enrollment, maternal mortality, infant mortality and morbidity deteriorated.

Recent years

The economic collapse in Mongolia, albeit painful, was shorter than in most other transition economies of the former Soviet bloc. Mongolia managed to sustain moderate economic growth since mid-1990s: GDP growth rate averaged 2.5 percent a year between 1996 and 2001 and improved to 4.6 percent in 2002, 5.4 percent in 2003, and 10.6 percent in 2004. Total GDP, in real terms, reached its pre-transition level in 2002.

[2] UNDP, *Human Development Report Mongolia*, Ulaanbaatar, 2003.
[3] In 1997, Mongolia joined the World Trade Organization (WTO).

Real per capita GDP was US$511 in 1989, plummeted to US$371 in 1993, before recovering to US$457 in 2003.

The composition of Mongolia's GDP changed as the economy steered into the 21st century. Agriculture, at its peak in 1995, constituted 40 percent of GDP but fell to 20 percent in 2003 where over 80 percent of the sector's activities were related to animal husbandry. Three consecutive *dzuds* (harsh winters) of 1999-2001 that wiped out over 30 percent of the livestock population contributed to the decline in the sector. Between 1999 and 2003, the share of industry increased from 22 percent to 26 percent while services rose from 43 percent to 54 percent. The changes in sectoral growth were accompanied by correspondent changes in employment and substantial migratory movements from rural to urban areas. Employment share in agriculture fell from 50 percent in 1998 to 45 percent in 2002, while that in services increased from 34 percent to 41 percent[4]. Its economy is still narrowly based with a few commodities[5] in which copper makes up about half of its export, and a quarter of its GDP. Fluctuations in the world price of copper have immediate and multiplier effects on the economy.

Comparing the 1998 and 2002/3 surveys

Over the course of 2002 and 2003, Mongolia's National Statistical Office (NSO), with the support of the World Bank and United Nations Development Program (UNDP) conducted the first nationally representative household survey, Household Income and Expenditure Survey (HIES), in conjunction with a smaller Living Standard Measurement Survey (LSMS).[6] Earlier LSMS in 1995 and 1998, on which poverty estimates were based, are not nationally representative.

The design and sampling frames of the LSMS 1998 differ significantly from those of the HIES-LSMS 2002-3; as a result, poverty numbers which are extremely sensitive to the consumption aggregates construction are strictly non-comparable between the two surveys. The major differences between the surveys include the different methodology for recording household expenditure (diary in 2002/3 versus recall in 1998); the length of recall periods; the sampling procedures; the duration and months of the field work; country coverage; fieldwork procedures; interview structure; and items in the food and non-food modules.

Despite these technical differences, which are extremely important, we made the best attempt to select two closely, albeit imperfectly, comparable subsets of the LSMS 1998 and HIES-LSMS 2002-3 data. Consumption-based measures of poverty are very sensitive to changes in the sampling design while non-monetary dimension of poverty

[4] Employment shares in the three sectors estimated with the sample are very similar to those of administrative sources: 44.6 percent in agriculture, 10.7 percent in industry and 44.8 percent in services. In addition estimates from the Labour Force Survey also support the accuracy of these values: 46.7 percent in agriculture, 11.9 percent in industry and 41.4 percent in services.

[5] Between 1990 and 2003 Mongolia attracted a total of US $1bn in direct investments, about half of which went to the mining sector.

[6] However, it should be noted that there are significant methodological differences between the 2002/3 survey, and the previous LSMS. A discussion of the methodologies is provided in Annex 1.

is more robust to such changes. This chapter will present multiple facets of poverty in 1998 and 2002. Because of the weaknesses of the data, we will not analyze inequality measures in depth except for summary measures (Box 1).

Monetary dimension of poverty

Given the problem of non-comparable survey designs (see Annex I, table A-1 for the differences across surveys), most comparisons between 1998 and 2002 in this chapter will be based on an imperfect but compatible subset of sampled households with a reduced list of consumption aggregates; a country coverage of only 9 common aimags; and a consistent poverty line.[7] Nevertheless, we will also make an attempt to backward project the national poverty incidence for 1998, based on available information.

Based on the closely compatible sub-samples, Figure 6 shows that real household consumption has increased for the entire distribution, and in all strata: Ulaanbaatar, *aimag* centers, *soum* centers, and countryside. Figure 6 also suggests that growth in consumption for households in the lower end of the distribution has been higher (Box 1). Thus, real consumption of the population, and in particular, the poor improved between 1998 and 2002. Mean per capita household consumption of food in the country[8] increased by 7 percent and that of food and non-food rose by 18 percent between 1998 and 2002. (Table 3)

[7] The consistent poverty line for comparison over time will be based on the reduced list of consumption items. This differs from the official poverty lines for 1998 and 2002 which are non-comparable with each other.

[8] We only include the sub-sample with common aimags for both 1998 and 2002, i.e., Ulaanbaatar and 8 other aimags

Box 1: Inequality of consumption and of livestock holding

Based on the comparable sub-sample covering 9 *aimags*, inequality in household consumption fell. The estimated Gini coefficient dropped from 0.38 in 1998 to 0.33 in 2003. The finding of reduced inequality is contrary to the general perception but this is the only information we have based on the imperfect data sets. When we examine the holding of livestock, we find that inequality of livestock has increased. The number of *bods*[9], which is a measure that re-scales the different value of various animals into equivalent horses, for the poorest two quintiles (of consumption) in rural areas has fallen significantly while the number of *bods* among the richest quintile has risen. In 1998, the richest quintile had twice the number of *bods* of the poorest quintile, but in 2002, the richest quintile had 4.7 times the number of *bods* of the poorest quintile. Unfortunately, for technical reasons, we cannot construct other household assets* for comparison between 1998 and 2002.

Per capita bods (horse-equivalent) by consumption quintiles, 1998 and 2002

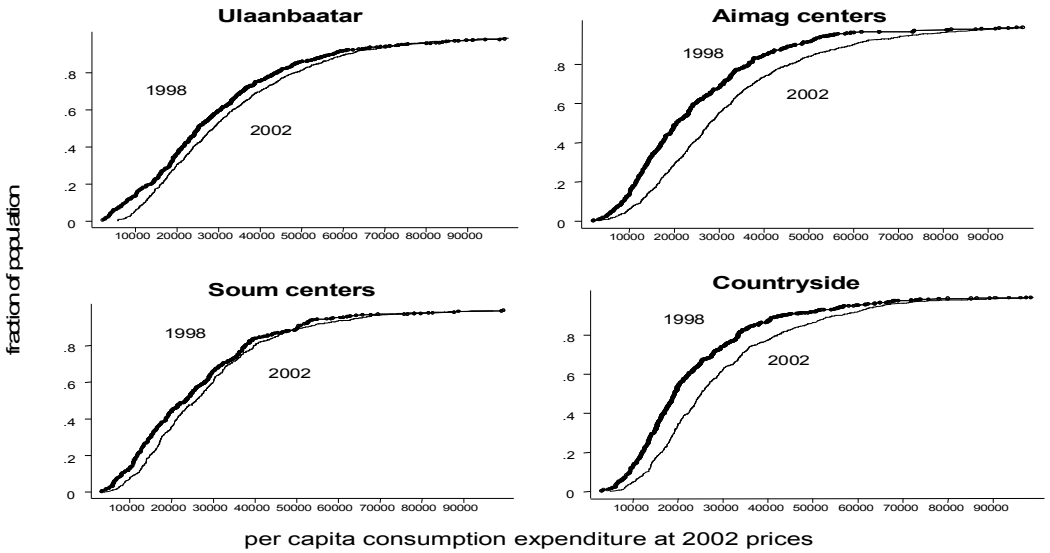
Rural areas	1998	2002
Quintile1 (Poor)	4.4	2.8
Quintile 2	7.0	5.1
Quintile 5 (Rich)	8.6	13.2
Ratio Quintile 5: Quintile 1	1.9	4.7

Source: LSMS 1998 and HIES-LSMS 2002-3

* Footnote. The 1998 LSMS data we have, which is not an original file, do not contain information on household durable goods and assets.

[9] The purpose of the *bod* scale is to calculate the size of the herd by transforming all livestock held into equivalent horses. One horse is assumed to be the same as one cattle (cow or yak), 0.67 camels, six sheep or eight goats.

Figure 6: Cumulative distribution functions of household consumption by geographical locations, 1998 and 2002



Source: LSMS 1998 and HIES-LSMS 2002-3
Note: Only comparable consumption items (see Annex 1) and common aimags i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included in both 1998 and 2002 subsets of sampled households. Detailed list can be found in Table A-2 of Annex 1.

Table 3: Real per capita monthly household consumption (in 2002 prices) in 1998 and 2002 and growth rates for comparable subsets of households

	Mean per cap food spending (in Tg)			Mean per cap total consumption (in Tg)		
	1998	2002	Growth '98-'02	1998	2002	Growth '98-'02
National	15278	16350	7%	26980	31958	18%
Urban areas	14302	15390	8%	28404	33596	18%
Rural areas	16226	17545	8%	25596	29920	17%
Ulaanbaatar	14303	15477	8%	30830	34144	11%

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: Only comparable consumption items (see Annex 1) and common aimags i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included in both 1998 and 2002 subsets of sampled households.

When we examine particular sub-groups of the population living in the common 9 aimags for 1998 and 2002, we also find that their real per capita consumption increased. Table 4 reports that household consumption grew by 66 percent in Ulaanbaatar male headed households, whose head had secondary or less schooling while consumption grew by 24 percent among rural households, headed by male, engaging in livestock husbandry.

The former group represented the unskilled and less educated which were key characteristics of poor households, and the latter represented rural herders, a potentially vulnerable groups.

Table 4: **Real per capita average monthly consumption (2002 prices) for sub-groups of the population**

	1998	2002	Growth 1998-2002
Male head, in UB, with secondary or less schooling	22,328	37,108	66%
Male head, in UB, engaged in services	36,000	47,708	33%
Male, rural, engaged in agriculture or livestock husbandry	26,113	32,430	24%

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: Only comparable consumption items and common aimags i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included in both 1998 and 2002 subsets.

Table 5 presents two scenarios of poverty incidences in 1998 and 2002. Case I consists of official and published poverty incidences which are non-comparable with each other because the figures were based on samples with (a) different coverage of the country (i.e., 9 aimags in 1998 and 22 aimags in 2002), (b) incompatible consumption aggregates (i.e., 96 items in 1998 and 334 items 2002), and (c) inconsistent poverty lines. It is, therefore, misleading to conclude that there is no poverty reduction based on these incompatible poverty incidences.

Case II presents best-informed backward-projected poverty incidence for the entire country in 1998 which was estimated to be 43 percent. This estimate is based on one consistent poverty line, and compatible consumption baskets in both 1998 and 2002. We also adopt the simplifying assumption that poverty reduction rate in the 13 non-surveyed aimags is similar as that in the 9 surveyed aimags (in 1998), because of lack of information to indicate otherwise. (see Box 2)

Table 5: Trends of poverty incidences: non-comparable official estimates and comparable estimates, 1998-2002

Case	Samples are constructed from	Poverty Incidence (%)		Poverty Line in 2002 prices (Tg/mth/person)	
		1998	2002	1998	2002
I [Official estimates]	(a) **non-comparable** consumption aggregates between 1998 and 2002; (b) **different coverage** of the country in 1998 and 2002; and (c) **inconsistent** poverty lines across time	36.3	36.1	various	24,743
II	(a) **comparable** consumption baskets; (b) **coverage of all** aimags; and (c) **consistent** poverty lines	43.1	36.1	24,743	24,743

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: The nine aimags sampled in both 1998 and 2002 are UB, Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol. PPP is short for purchasing power parity. Case I consists of official and published poverty numbers for 1998 and 2002.

Box 2: Backward projection of national poverty incidence for 1998

Although the HIES-LSMS 2002-3 was the first survey that sampled all 22 aimags the entire country, we can still use existing information and postulate some simple assumptions to estimate the poverty incidence for excluded (or non-surveyed) aimags in 1998 and in turn backward-project the poverty incidence for the entire country in 1998. This backward projection is useful because it provides a best informed estimate of poverty headcount for the entire country in 1998 and whatever the estimates may be, this exercise enables a discussion about which hypotheses can be ruled out (e.g., stagnant, modest, or rapid poverty reduction) and whether the estimates are plausible given the situations then and now. The key ingredients for this exercise are (a) the *population shares* of surveyed aimags and excluded aimags from the 1998 LSMS in both 1998 and 2002; and (b) the *poverty reduction rate* of commonly surveyed aimags in years 1998 and 2002.

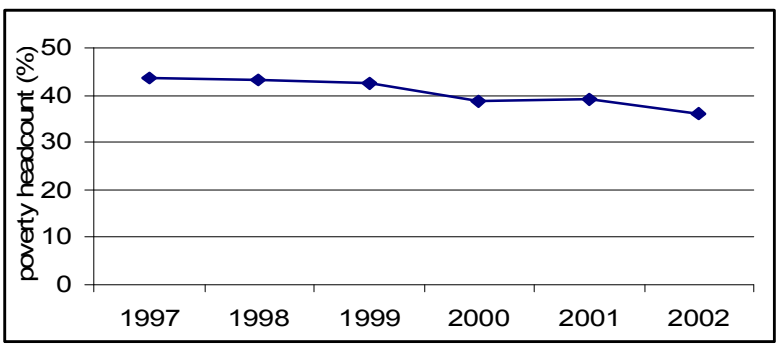
Based on a closely comparable consumption basket for years 1998 and 2002, and a consistent poverty line, we estimate that poverty incidence fell by 19 percent in the 9 commonly surveyed aimags (i.e., UB, Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) between 1998 and 2002. For lack of data, we assume that the remaining 13 non-surveyed aimags also experienced similar rate of poverty reduction during this period. This is the best-informed assumption because there is no other information such as provincial GDP to suggest otherwise. Based on these pieces of information, the backward projection of the national poverty incidence in 1998 is 43.1 percent. (see Table A)

Table A. Backward projection of national poverty incidence in 1998

	Population share in 1998	Poverty incidence (%) in 1998	Population share in 2002-3	Poverty incidence (%) in 2002-3
9 commonly surveyed aimags	0.61	41.2	0.63	34.6
13 remaining aimags not included in 1998 LSMS	0.39	46.1	0.37	38.7
National–entire country		43.1		36.1

Another approach of estimating poverty incidences of the past years is a backward projection that utilizes macroeconomic data. The World Bank poverty projection toolkit, *POVSTAT*[10], takes as given the sectoral distribution of households by the industry affiliation of household heads from the HIES-LSMS 2002. It then assumes that household income grows at the same rate as output growth in the agriculture, services and industry sectors. The changes in sectoral employment growth are also taken into consideration. *POVSTAT* assumes that household consumption grew at the same rate as household income which in turn is assumed to grow at the similar growth rates as the sector in which household heads are working. Figure 7 shows that poverty incidence was on the decline from 43 percent in 1998 to 36 percent in 2002 based on actual sector-specific output and employment growth rates during this period. The similar point estimate of poverty incidence for year 1998 based on the two different approaches is a pure co-incidence. Nevertheless, the estimates gave us some confidence that poverty incidence had fallen from about over 40 percent in 1998 to 36 percent in 2002.

Figure 7: Backward projected trend of poverty incidence shows a decline between 1998 and 2002



Source: POVSTAT estimates based on macroeconomic data and HIES-LSMS 2002-3

[10] Details about the projection methodology of POVSTAT are presented in Annex III

Non-monetary dimension of poverty

In terms of non-monetary indicators of poverty, there is also evidence, based on the LSMS 1998 and 2002, of improvement in the living standards of the poor (Table 6). In 1998, only 27.3 percent of households in the poorest 40th percentiles had access to electricity; by 2002, 51 percent in that category had electricity. Similarly, access to improved water sources also increased for the poorest two quintiles, from around 17 percent to 46 percent.

Table 6: Access to electricity and improved water sources, 1998 and 2002

	Electricity		Improved water sources	
	1998	**2002**	**1998**	**2002**
Bottom 2 Quintiles	27.3	50.9	17.1	46.3
National	56	73	41	61

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: only households in common aimags for both 1998 and 2002, i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included

Table 7 shows that the proportion of working children (age 10-14) among the poorest two quintile groups fell from 8.2 percent to 4.6 percent of households. Correspondingly, the proportions of children, ages 8-12 and ages 13-17, who were not in school fell from 11.7 percent to 5.7 percent, and from 24.2 percent to 14.5 percent respectively, among households in the poorest two quintile groups. This improvement was evidence of better living standards between 1998 and 2002 among the poor.

Table 7: Proportion of working children and non-attendance, 1998 and 2002

	Children 10-14 working		Children 8-12 not attending school		Children 13-17 not attending school	
	1998	**2002**	**1998**	**2002**	**1998**	**2002**
Poorest Quintile	5.3	4.7	16.3	8.3	27.5	21.0
Quintile 2	10.9	4.6	7.6	3.5	21.1	9.0
Bottom 2 Quintiles	8.2	4.6	11.7	5.7	24.2	14.5
National	9.3	2.8	8.0	3.1	16.3	8.2

Source: LSMS 1998 and HIES-LSMS 2002-3
Note: only households in common aimags for both 1998 and 2002, i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included

Examining only the rural areas where poverty incidence has been higher, we find that enrollment rates improved among the rural population and also the rural poor during this period. Table 8 shows that among children ages 8-12 in the two poorest quintile

groups, primary school enrollment rate increased from 84 percent in 1998 to 91 percent in 2002. The corresponding rates among all rural children, ages 8-12, were 82 percent and 91 percent. For children ages 13-17, in the two poorest quintile groups, secondary enrollment rates increased modestly from 61 percent to 66 percent while for all rural children, ages 13-17, the corresponding rates were 65 percent in 1998 and 74 percent in 2002. Further evidence of improvement in living standards of the poor is reflected in increases in real per pupil spending of households in the two poorest quintile groups, by 41 percent for primary schooling and 5 percent for secondary schooling.

Table 8: Enrolment rates and average per-child monthly educational spending (in 2002 prices) in rural areas, 1998 and 2002

Rural areas only	Enrollment rates, age 8-12		Enrollment rates, age 13-17		Per-child spending (primary)		Per-child spending (secondary)	
	1998	2002	1998	2002	1998	2002	1998	2002
Bottom 2 Quintiles	84	91	61	66	1740	2465	2536	2669
All rural households	82	91	65	74	2320	3113	10247	4026

Source: LSMS 1998 and HIES-LSMS 2002-3

Note: only households in common aimags for both 1998 and 2002, i.e., UB and 8 other aimags (Arhangai, Govi-Altai, Dornod, Ovorhangai, Omnogovi, Tov, Hovd, Khovsgol) are included

Other socio-economic indicators from various issues of the Yearbooks (Table 9) also suggest that living standards for the general as well as herder population improved during this period. For example, infant mortality has fallen; access to physicians, water supply and bath houses improved; and ownership of consumer durable goods increased.

Table 9: Various socio-economic indicators of the general and herder population, 1998-2003

	1998	2003
Infant mortality rates per 1000 births	35	21
Number of people (population) per physician	411	360
Number of vehicles per 1000 population	15.6	25.2
% herder households with TV	10	19
% herder households with cars	4	11
Number of bath houses	178	256
Number of water supply sources	641	883

Source: NSO, various years of Yearbooks.

External sources of information also confirmed the improvement of living standards during this period. Statistics from the Food and Agriculture Organization indicate that domestic meat and cereal consumption rose throughout this period. Meat consumption rose from 230,000 metric tons in 1990-94 to 240,000 metric tons in 1995-98, to 263,000 metric tons in 1999-2002. Cereal consumption rose from 260,000 metric tons in 1990-94 to 285, 000 metric tons in 1995-98, to 314,000 metric tons in 1999-2002. In per capita terms, meat consumption rose from 100kg/year during 1991-94 to

104kg/year during 1999-2002 in, and cereal consumption increased from 113kg/year to 125kg/year during the same period.

Projections of poverty estimates, 2002-2005

Because the latest HIES-LSMS was carried out in 2002-3, the information provided is rather dated even though this Report is the first to utilize the dataset. Given that we have actual macroeconomic data, we will use the sectoral output and employment growth rates to make a projection of poverty estimates for years 2003-2005 using the World Bank-developed *POVSTAT* software.[11]

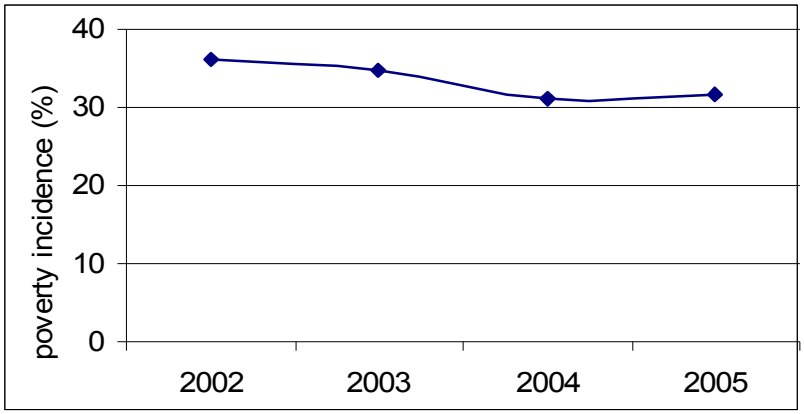
Based on the actual growth rates of outputs and employment in agriculture, industry, and services sectors of years 2003 through 2005 wherever available[12], and the HIES-LSMS 2002 data, Figure 8 plots the projected poverty incidences of one scenario. Two alternative scenarios are presented in Box 3. In the scenario of Figure 8, we assume that GDP growth rate does not translate one-to-one into household income growth in equal amount for every household. In other words, the distribution within sector has changed. Anecdotal evidence suggests that inequality has been rising and even with the double-digit growth of agriculture in 2004, most of the gains have gone to livestock replenishment of larger and richer herders. Based on the assumption that inequality within sector rises by 5 percent a year, we project that poverty incidence would have fallen modestly from 36 percent in 2002 to 32 percent in 2005. This declining trend of poverty incidence is plausible in view of the healthy GDP growth of 5.6 percent in 2003, 10.7 percent in 2004, and 6.2 percent in 2005.

In addition, other information such as the surge in remittances and rural credit could likely have contributed to **overall** income and consumption growth. However, It is also likely that the relative gains from rural credit and remittances might disproportionately accrue to the better off. According to the figures of the Central Bank of Mongolia, net inflow of remittances rose from USD 64 million in 2002 to USD 134 million in 2005. Data from the largest lender in rural areas, Khan Bank, indicate that rural credit rose from USD 20 million in 2002 to USD 107.5 million in 2005 and the number of rural borrowers more than doubled from 84,000 to 177,000 during this period. Similar trends are also observed among smaller banks.

[11] *POVSTAT* uses the HIES-LSMS 2002-3 data and projects poverty estimates based on (a) the actual growth rates in the agriculture, industry, and services sectors; (b) actual sectoral shares in GDP; (c) distribution of employment in the three sectors and employment growth rates in these sectors. Details are in Annex III.

[12] Not all data for year 2005 is available and we take the average of years 2000-2004 for those (sectoral employment growth, sectoral employment shares) unavailable.

Figure 8: Forward projection of poverty incidence (2002-2005) indicates a declining trend

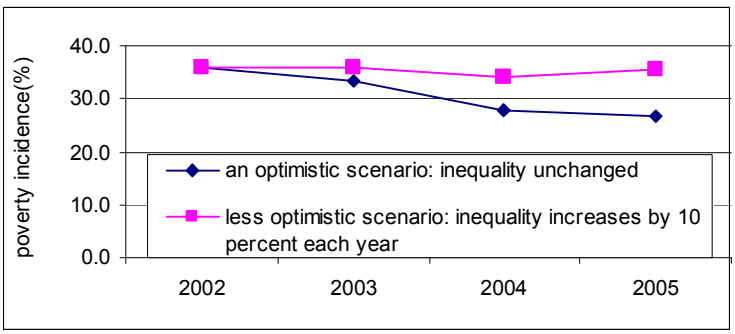


Source: HIES-LSMS 2002 and POVSTAT projections based on macroeconomic data

Box 3: Forward projection of poverty incidence, 2003-2005

In the main text, we present one scenario in which inequality within sector grows by 5 percent a year. However, there are other scenarios to consider. The basic projection which happens to be the most optimistic is one assuming that inequality (within-sector distribution) remains unchanged and that GDP growth in any particular sector is translated into an equal amount of income and consumption growth for every household whose household head works in that sector. This implies that growth is broad-based and shared by all. Under this scenario, poverty incidence would have fallen dramatically from 36 percent in 2002 to 27 percent in 2005.

Another scenario assumes that within-sector inequality rises by 10 percent each year. For example, the double-digit growth rate in the livestock sector in 2004 seemed to be driven by richer herders replenishing their livestock, and not because poorer herders gained. Besides, the growth in industrial sector came primarily from the mining sector which is not a labor-intensive industry while manufacturing experienced negative growth. In this more pessimistic scenario of rising inequality or narrowly-based growth, poverty incidence remains unchanged between 2002 and 2005.



Recommendations

A comparison of the household surveys of 1998 and 2002-3 surveys suggests that there has been progress in poverty reduction. However, there are significant methodological differences between the two surveys, which limit the robustness of this finding. Moreover, much of the detailed survey data has not been released to the public, limiting our ability to undertake a more comprehensive analysis. National Statistical Office (NSO) has implemented other surveys (e.g., Labor Force Survey; Reproductive Health Survey; Ulaanbaatar Migration and Poverty Survey) which can provide insights to various dimensions of poverty and allow comparison overtime to gauge progress of living standards of Mongolian population. Unfortunately, all data, including the LSMS 1998 and the HIES-LSMS 2002-3, remain inaccessible to the public. This report recommends that all survey data be made available to the public to promote more detailed analyses and constructive debates on important policy issues.

Furthermore, to ensure comparability across time, this report recommends that future LSMS and the HIES adopts the 2002 HIES-LSMS design. In addition, it is recommended that the NSO review the sampling frame of Ulaanbaatar to ensure that new *ger* settlements and the influx of migrants from the *aimags* in recent years are included. It is also recommended that NSO harmonizes its annual HIES and donor-funded LSMS by including a core set of questions from the LSMS into the HIES and having rotating modules with different topics each year. This harmonization can be achieved with budget neutrality

Chapter Two: Poverty Facts from the Latest Survey, 2002-3

- According to the latest household Survey in 2002-3, 36 percent of Mongolia's population lives below the poverty line, which translates into about 894,000 individuals. Poverty in rural areas stood at 43 percent, while in urban areas it was 30 percent.
- The poor in Mongolia tend to live in rural areas; engage in occupations in the livestock sector; have more children; attain only lower secondary or less schooling; and have less access to basic services.
- These features of the poor motivate our further analyses into the challenges of poverty in the livestock, education, social assistance, and energy sectors in Chapters 3 through Chapters 6, respectively. In particular, we investigate (a) vulnerability and poverty issues in the livestock sector; (b) the impact of social safety nets on poverty; (c) barriers to upper secondary schooling; and (d) heating needs of the poor

Introduction

As part of preparatory work for the Poverty Assessment, the World Bank team provided technical assistance to the National Statistical Office (NSO) staff to construct consumption aggregates, the poverty lines, and the commonly used Foster-Greer-Thorbecke (1984) poverty measures, based on the first nationally representative household survey. This chapter is a brief summary of main poverty characteristics from the poverty profile published jointly by NSO-WB-UNDP, *Main Report of Household Income and Expenditure Survey-Living Standard Measurement Survey, 2002-3* (December 2004).

Also, as one of the background pieces for the Poverty Assessment, the World Bank collaborated with the Asian Development Bank and the National Statistical Office to carry out a qualitative analyses of poverty based on focus group discussions. The report is published jointly by the Government of Mongolia, the Asian Development Bank and the World Bank, *A Participatory Poverty Assessment,* (*2005*), and excerpts from participants of the focus group discussions are quoted throughout this Report.

Poverty and consumption

According to the first nationally representative household survey, HIES-LSMS 2002-2003, some 36 percent of Mongolia's population or about 894,000 individuals lived below the poverty line[13]. Poverty in rural areas stood at 43 percent, while in urban areas it was 30 percent.[14] Poverty severity was greater in rural than in urban areas. There was considerable variation in poverty measures across the country: more than half the population in the West was classified as poor, almost twice the rate in

[13] Defined as real per capita consumption of Turag 24,743 per month (around $21 in 2002 prices and market exchange rate). This compares with an average per capita consumption of around $32 a month.
[14] Unless otherwise stated, all data provided in this chapter can be referenced to the 2002/3 survey.

Ulaanbaatar. To a considerable extent, these geographic differences also reflect differences in urbanization: the two regions with the highest poverty incidences, the West and Highlands, were also the two with the lowest rates of urbanization. The West also has the largest average household size, and highest dependency ratio, two other key factors associated with poverty (Table 10).

"People with small children or with bad health better settle in central, urban areas. Because local government, health and social welfare organizations are closer there and it is much easier to get some medical assistance, and also there are possibilities to collect some waste. There are more part-time work available (2000 tugs per day). My husband does this type of job from time to time"

A resident in Bayanzukh district, Khoroo 10

Table 10: National and urban/rural poverty estimates, 2002

	Poverty Headcount (%)		Poverty Gap (%)		Poverty Severity (%)	
National	36.1	(1.4)	11.0	(0.6)	4.7	(0.3)
Urban	30.3	(1.7)	9.2	(0.7)	4.0	(0.4)
Rural	43.4	(2.4)	13.2	(1.0)	5.6	(0.5)
West	51.1	(3.5)	14.6	(1.3)	5.7	(0.7)
Highland	38.7	(2.9)	12.3	(1.3)	5.2	(0.7)
Central	34.4	(3.0)	10.1	(1.4)	4.3	(0.8)
East	34.5	(4.4)	12.4	(2.3)	6.6	(1.6)
Ulaanbaatar	27.3	(2.6)	8.1	(1.0)	3.3	(0.5)

Note: Standard errors taking into account the survey design are shown in parentheses.
Source: 2002/03 HIES/LSMS.

Poverty and Employment

Poverty incidence was significantly higher for households headed by someone who were employed in agriculture (livestock) or not employed (i.e., unemployed or out of labor force). These households also made up the majority of (about 64 percent) of the total poor population. Households whose heads were involved in livestock activities experienced the highest incidence and greatest poverty than those whose head was employed anywhere else. (Table 11)

During early years of the transition, the shrinkage of manufacturing and the public administration pushed many people back to agriculture, but this trend has been reversed in recent years by the combination of consecutive winters of *dzuds* and the surge of the services sector. Services has been the main sector of employment in Mongolia since 2000, accounting for about 46 percent of all jobs, while agriculture (livestock) ranked a close second with 42 percent of jobs and the remaining 12 percent in industries (in year

2002). The main sectors of employment are very different in urban and rural areas. Livestock activities dominate in rural regions—accounting for more than seven out of ten jobs—while services account for almost three-quarters of the jobs in the capital and aimag centers.

The labor force participation rate stood at just under two-thirds in 2002. There were two very different groups among heads of households that were **not** participating in the labor market: pensioners and non-pensioners. The probability of being poor in households where the head was a pensioner was significantly lower than in families where the head was not— almost one-third compared to one-half.

Table 11: Poverty measures and employment of household heads

	Employed				Unemployed	Out of Labor Force
	Total	Agriculture	Industry	Services		
Poverty headcount	33.6	41.0	33.2	26.9	48.7	41.6
	(1.7)	(3.0)	(3.4)	(1.9)	(5.4)	(2.2)
Poverty gap	9.7	12.0	9.1	7.7	16.7	14.0
	(0.6)	(1.2)	(1.3)	(0.7)	(2.4)	(1.1)
Poverty severity	3.9	4.8	3.6	3.1	7.4	6.6
	(0.3)	(0.6)	(0.7)	(0.3)	(1.3)	(0.7)
Share below Poverty line (%)	66.5	34.2	8.1	24.3	4.0	29.4
Population share	71.5	30.2	8.8	32.6	3.0	25.5

Source: 2002/03 HIES/LSMS.
Note: Standard errors taking into account the survey design are shown in parentheses.

Poverty and the number of children

As is the case elsewhere, the poor in Mongolia tend to have more children than the non-poor. As household size increases, the number of children also rises. Households with 6 or more household members had significantly higher poverty incidence and greater poverty severity than smaller households. These households constituted close to 60 percent of the total poor but made up only a third of the total population.

Table 12: Poverty estimates by household sizes

	Household size							
	1	2	3	4	5	6	7	8 plus
Poverty headcount	1.2	7.4	15.5	23.5	34.4	48.5	57.4	69.4
	(0.9)	(1.8)	(1.7)	(2.0)	(2.2)	(3.0)	(4.0)	(3.7)
Poverty gap	0.4	1.8	3.6	6.2	9.1	14.9	19.0	26.1
	(0.4)	(0.4)	(0.5)	(0.6)	(0.8)	(1.2)	(1.7)	(2.3)
Poverty severity	0.2	0.5	1.2	2.3	3.5	6.1	8.1	13.3
	(0.2)	(0.1)	(0.2)	(0.3)	(0.4)	(0.7)	(0.9)	(1.6)
Share below poverty line (%)	0.0	0.9	5.6	15.0	21.2	21.2	15.7	20.5
Population share (%)	1.3	4.2	13.0	23.0	22.3	15.8	9.9	10.7
Children (% household size)	0.0	11.5	26.2	36.7	37.9	39.9	39.4	37.3

Source: 2002/03 HIES/LSMS.
Note: Standard errors taking into account the survey design are shown in parentheses.

Poverty and educational attainment

The educational attainment of the adult population is very high with adult literacy of 98 percent[15]. In 2002, more than four-fifths of the population lived in households where the head finished at least the 8th grade, and one quarter of Mongolians had a household head with tertiary education. By contrast, less than one fifth lived in households where the head had no education, or only primary school. The better educated were less likely to be poor, as in all other countries, but somewhat particular to the Mongolian context, there was little benefit to completing primary education, or lower secondary education to just the 8th grade level because poverty rates for these two groups were not different from those who had received no education at all. Only those with part of completed upper secondary education were significantly less likely to be poor and poverty severity also fell dramatically among those with some upper secondary schooling and beyond. (Table 13)

[15] World Bank, 2005. *World Development Indicators*

Table 13: Poverty estimates by schooling attainment

	None	Primary	Lower secondary 8th grade	Vocational	Upper secondary 10th grade	Diploma	University
Poverty headcount	45.8	45.6	45.5	40.7	34.9	23.4	11.6
	(4.9)	(3.6)	(2.3)	(3.4)	(2.3)	(2.5)	(2.1)
Poverty gap	12.8	16.4	13.8	13.1	9.3	6.7	2.9
	(1.7)	(1.7)	(0.9)	(1.5)	(0.9)	(0.9)	(0.7)
Poverty severity	4.8	7.9	5.7	6.0	3.6	2.7	1.1
	(0.9)	(1.1)	(0.5)	(0.9)	(0.4)	(0.5)	(0.3)

Source: 2002/03 HIES/LSMS.
Note: Standard errors taking into account the survey design are shown in parentheses.

Poverty and basic services

In addition to an analysis of incomes and consumption, there are non-monetary dimensions of poverty, notably households' abilities to access basic services, such as water and sanitation, healthcare, energy and communications. In 2002, three-fifths of the country had access to improved sources of water, half to improved sanitation facilities, three quarters to electricity, and four out of ten individuals to all of them. However, the availability of these services in urban areas was far more established than in rural regions, and the quality of services in urban areas was usually higher as well. Nationwide, households lacking appropriate water, sanitation or electricity were poorer still than those with access to them. Mongolia enjoys an extensive health system. Amongst those seeking treatment, 95 percent were able to visit a public facility. Urban dwellers and the non-poor were more likely to visit private providers.

"We use public baths one or twice a year, the cost is too high to heat water for bathing at home. There needs to be more public bath houses. There is only one in the district now. The cost needs to go down and time allocated to up from 20-30 minutes to at least 40-50 minutes."

"Poor families drink water from open sources. There are many families who practice this. It has been observed that stomach infection cases come more often from these families"

Focus group discussion in Nalaikh district, Khoroo 1

Winters can be harsh and long in Mongolia, and heating is a necessity of survival. All households in the Ulaanbaatar **city center** are connected to district heating grid for provision of heat and hot water whereas but Ulaanbaatar **ger districts** where the poor are rely on their individual heating stoves. Thirty percent of households in *aimag* centers are also connected to the central system. Where households are fortunate enough to be connected to the district heating network, heat expenditure is low

compared to international standards. Heat expenditure however places a large burden on households not connected to the district heating network because fuel purchase.

> *" The poor experience real difficulties with fuel and firewood. Those who don't have fuel burm shoes. They collect shoes from waste sites. They also burn plactic containers"*
>
> *"...due to lack of heating many catch pneumonia and end up in hospitals. One woman told us that she had forgotten her child's medicine at home and when she returned in the evening it had frozen, without heating fuel she cannot treat her child at home, she asked that the child be hospitalized."*
>
> *Focus group discussion in Bayanzukh district, Khoroo 12*

Motivation for analyses in the next four chapters

Based on these salient features of poverty as well as extensive in-country consultation during the pre-concept-note stage, we find that poverty challenges are most pressing in the livestock, education, and energy sectors. Thus, we will investigate in-depth these poverty challenges in Chapters 3 through Chapters 5, respectively. The report then devotes a chapter each to examine the effectiveness of public actions for poverty reduction, namely social assistance programs (Chapter 6), and overall governance and institutions (Chapter 7), respectively.

Confirming existing literature about the prevalent feeling economic insecurity among rural herder households, we find that poverty is widespread amongst Mongolia's herders, afflicting one-third of households. Indeed, herder households constitute the single largest group amongst the poor, and of all households with household heads engaged in some form of economic activity, herder households have the highest incidence of poverty. Chapter 3 will look into factors behind livestock mortality risks and their link to vulnerability and poverty of herders.

As is widely documented in the literature, education is a means out of poverty. Similarly in Mongolia, educational attainment is negatively associated with poverty. But of particular importance in Mongolia is the completion of upper secondary schooling. Only those with upper secondary and beyond have significantly lower probability of being poor. Among those with lower secondary schooling or less, the likelihood of falling into poverty is similar whether one has less than primary schooling or one has completed lower secondary education. This finding motivates our analyses of demand and supply factor behind attrition (dropout) at Grade 8 in Chapter 4.

The harsh climate of Mongolia makes heating even more important than food needs during winter months. Unlike other low-income countries where the bulk of consumption – three-quarter or more – for the poor is food, in Mongolia food constitutes less than 50 percent of the poverty line and heating makes up a substantial proportion of the non-food share. Chapter 5 looks into poverty and affordability issues in the energy sector and in particular, heating.

Social assistance programs are meant to help the poor and alleviate poverty. In Mongolia, social safety nets take up a significant amount of fiscal resources (about 7 percent of GDP). However, the effectiveness of public assistance in poverty reduction has not been examined. Chapter 6 will assess the targeting effectiveness of existing social safety net programs and the newly implemented Child Money Program. Lastly, Chapter 7 will examine institutional factors (e.g., implementation effectiveness, policy consistency) that influence poverty reduction effectiveness in the country.

Chapter Three: Reducing Vulnerability to Livestock Mortality

- Livestock mortality shocks directly contribute to declines in consumption and well-being amongst herder households. However, there is a core group (about 26%) of **chronically** poor herder households, distinguished by large families and very small herds, regardless of the state of the world. For this group of chronically poor herder households, supplementary and preferably alternative sources of income need to be identified and developed. This will not be an easy task, and will require an improvement of the rural investment climate and strengthening supply chains for livestock-based activities
- While covariate shocks, such as country-wide *dzuds*, are undeniably an important source of livestock mortality, idiosyncratic or highly localized factors are also critical in determining the incidence of livestock mortality at the household level. Policies to help herder households have to go beyond interventions/responses that are triggered by catastrophic events. Public action is needed on an ongoing basis to help households cope with livestock mortality shocks that are highly localized, perhaps even limited to individual households, and should include both ex-ante risk-reducing measures and ex-post schemes that are targeted at the household level

Introduction

Households in 2002 were categorized by self-reported primary occupation of the household heads and herder households constituted the single largest group amongst the poor. And of all households with household heads engaged in some form of economic activity, herder households had the highest incidence of poverty (see Table 14)

Table 14: Poverty, by occupation of household head

	Share of the population	Share of the poor	Incidence of poverty
Herders	**28.6**	**32.7**	**41.2**
White collar workers	15.1	6.7	16.1
Service workers	6.2	5.7	33.5
Skilled workers	16.1	15.1	33.9
Unemployed	3.0	4.0	48.7
Out of the labor force	25.5	29.4	41.6
Others	5.4	6.3	41.6

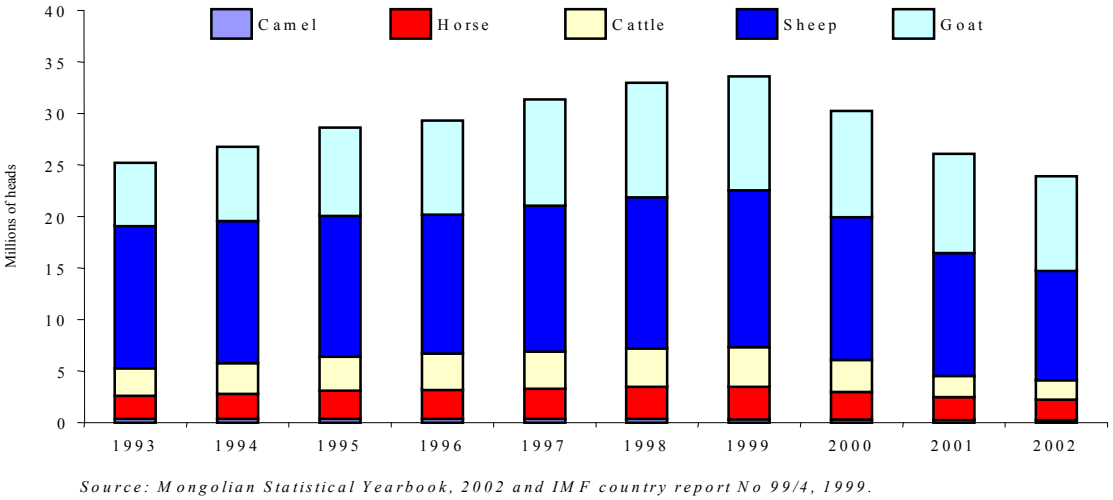
Source: analysis of HIES-LSMS 2002.

Throughout the 1990s, Mongolia's livestock population grew steadily until 1999. However, since then, a series of *dzuds*[16] and dry summers that lasted until 2002 reduced

[16] The Mongolian term for extremely harsh winters.

the livestock population by almost 30 percent, the largest losses in at least 35 years. (see Figure 9) The scale of the disaster was probably augmented by the uncontrolled growth of herds and their bad management[17], but the climatic shock was definitely extraordinary.

Figure 9: Livestock population in Mongolia, 1993-2002



Source: NSO (2004)

The aim of this chapter is to inform policy and public actions directed to reduce the vulnerability (to poverty) of herder households by undertaking an analysis of livestock mortality risk and its links to poverty and vulnerability amongst Mongolia's herder households.

By combining data from the 2002/03 Household Income and Expenditure Survey/Living Standards Measurement Survey (HIES/LSMS), the Livestock Census, and the 2004 Mongolia Rural Investment Climate Survey (RICS), this chapter:

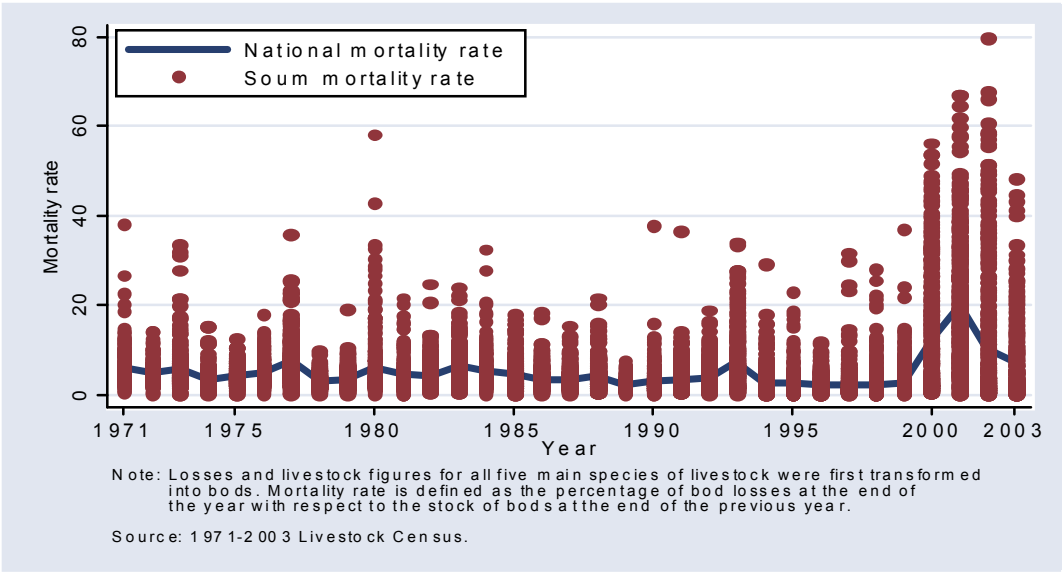
- Documents and analyze patterns of exposure to livestock mortality risk
- Identifies factors that contribute to livestock-mortality risk at the household-level
- Traces the impact of livestock-mortality shocks on consumption and well-being
- Estimates the contribution of livestock mortality to poverty and vulnerability amongst herder households

[17] See Mongolia Human Development Report, 2003, pages 39-40 for more information on the impact of *negdels'* dissolution. Negdels were livestock cooperatives with specific tasks of disaster management (grazing land reserves, veterinary support, provision and maintenance of animal shelters and fodder reserves).

Documenting patterns on livestock mortality

Livestock mortality risk is widespread in the country, both at the household and soum level:[18] In 2002, one of the worst years in the last 35 years in terms of livestock mortality, 56 percent of herder households reported losses of livestock due to unnatural causes (theft and diseases). At the aggregate level, livestock mortality rates vary considerably across soums and years. (Figure 10)

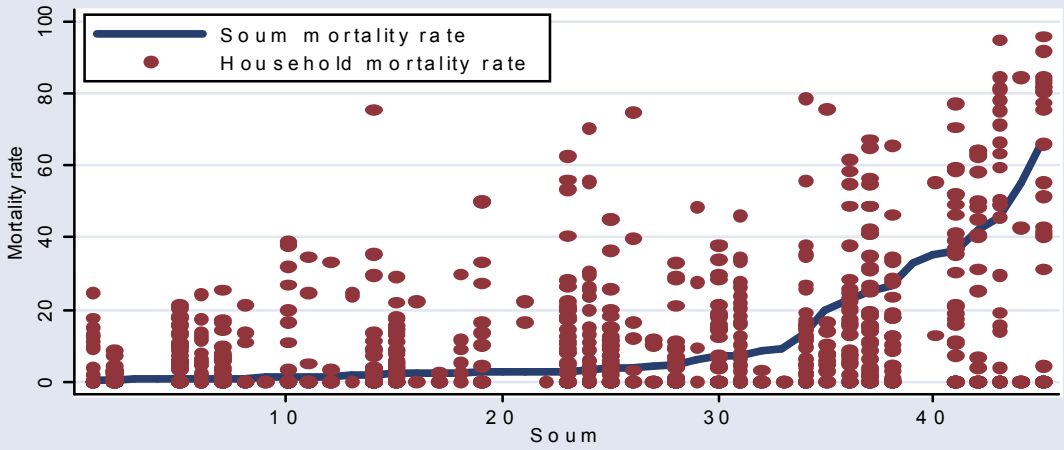
Figure 10: Livestock mortality rate, 1971-2003



For any given year, there is a huge dispersion of mortality rates across soums and within a soum, there is also significant variation of bod mortality rates across households (see Figure 11). For instance, in 2002, the bod mortality rate in the country was the third highest of the period at 10.4 percent, but almost 40 percent of the soums exhibited mortality rates lower than 2 percent.

[18] Livestock mortality is defined as the ratio between the unexpected bod losses at the end of the year with respect to the bod herd size at the end of the previous year. The available data offer a unique opportunity to combine household with soum level information. The former came from the 2002/03 HIES/LSMS, which collected self-reported data on livestock losses at the household level. The latter came from the livestock census, which provides an annual count of livestock losses at the soum level.

Figure 11: Household livestock mortality rate, 2002



Note: Losses and livestock figures for all five main species of livestock were first transformed into bods. Mortality rate is defined as the percentage of bod losses at the end of the year with respect to the stock of bods at the end of the previous year.

Source: 2002/03 HIES/LSMS and 2002 Livestock Census.

Households with high (low) mortality rates are quite common in *soums* with low (high) mortality rates. Over 13 percent of herder households experienced bod mortality rates higher than 30 percent in 2002, some of them in *soums* with aggregate mortality rates as low as 4 percent. This evidence suggests that widespread *dzud* conditions were not the only or primary reason for the high levels of livestock mortality for herder households. In other words, even in the presence of covariate shocks, idiosyncratic or highly localized factors appear to be crucial in determining livestock mortality at the household level.

The pattern of livestock mortality suggests that in addition to interventions or responses—e.g., index-based livestock insurance or regional *dzud*-relief efforts—that are triggered by large aggregate shocks, public action is needed on an ongoing basis to help households cope with livestock mortality shocks that are highly localized, perhaps even limited to individual households. However, in designing programs to address this need, potential moral hazard problems have to be adequately considered—i.e., household level incentives to reduce livestock mortality must be preserved.

Understanding variation in mortality rates

If indeed, covariate shocks do not necessarily translate one for one into livestock mortality at the household levels, what are the household or community (*soum*) characteristics that influence mortality rates at the household level? The available data permit a limited investigation of this question, but further analysis is clearly needed.

An initial assessment of the factors that explain variation in mortality rates at the *soum*-level yielded three robust findings:[19]

- the quality of the roads is significantly correlated with lower *soum* mortality rates. This point to the fact that communities with better infrastructure to access other markets are in a better position to avoid livestock losses, perhaps due to more market participation or less difficulty to obtain inputs for herding.
- the presence of financial institutions providing loans for non-agricultural purposes is associated with lower levels of livestock mortality. This may reflect that in *soums* where economic activities are more diversified, those involved in herding must be more specialized (in order to obtain the same rate of return) and hence show lower livestock losses. Or there might be a spillover effect from non-agricultural activities towards herding.
- in communities where a greater fraction of households have access to safe water, livestock losses are less likely.

Based on household-level regressions (of a sample of 782 herder households) with covariates including both household and community characteristics as well as the *soum* mortality rates as a proxy for the aggregate shock, the findings indicate that *soum* mortality rates were always highly significant and positively correlated with household losses, indicating that there is a significant covariate component to the household livestock mortality. But the fact that the overall fit of the models was relatively low, suggests that there is substantial variation of household livestock mortality rates that is not being captured by our models. Hence, non-observable idiosyncratic factors should be playing a major role in determining livestock losses.

There is a significant and positive association between herd size and the household-level livestock mortality rates. This is not as counter intuitive as one might think. If it is relatively cheap to maintain one animal alive but it gets increasingly difficult to give the same level of care to all the animals as the size of the herd increases (because of scarcity of resources or monetary costs), one can expect to see mortality rates increase with the size of the herd.

The main finding here, however, is the fact that the variation in household-level mortality rates is hard to explain with the data on household and community characteristics that are available and are in many dimensions, quite rich. Hence, more detailed analysis is needed to better identify the factors that cause excess livestock mortality at the household level and to design responses to reduce the risk of livestock-mortality.

[19] Data on community (soum) characteristics came from the 2004 Mongolia Rural Investment Climate Survey (RICS). This information was combined with that from the Livestock Census and a sample of around 50 soums was obtained. Ordinary Least Squares (OLS) and quantile regressions were estimated having the soum mortality rate as the dependent variable and community features as the covariates. Instability in some of the correlations stems from the reduced sample size and collinearity (soum characteristics are highly correlated across soums).

Tracing the impact of livestock mortality on consumption and poverty

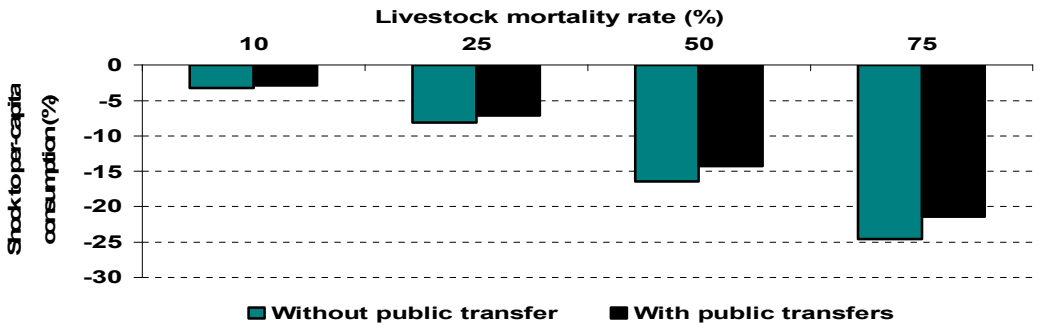
The exposure to risk and the realization of the shock can, but does not need to, translate into adverse effects on the household well-being. A household could be located in a *soum* that has been severely hit by weather events (and thus displays high mortality rates), could have lost livestock but may still be able to maintain its consumption and well-being levels. Whether it does or not depends on the strategies—both formal and informal—it has available to cope with the loss of income implied by livestock losses. To what extent are herder households able to cope?

Analysis of the HIES-LSMS data indicates that livestock mortality shocks translate directly into lower consumption levels for herder households.[20] On average, a 1.0 percentage point increase in the livestock mortality rate by a household in a given year reduces the household's per capita consumption by 0.3 percent. For instance, a household experiencing a 50 percent livestock mortality rate will observe a reduction of its per capita consumption by 15 percent.

A counterfactual simulation of the impacts on poverty shows that, in the absence of livestock mortality shocks in 2002, the incidence of poverty among herder households would have been lower by 2 percentage points.

One factor that appears to improve the household's ability to cope with livestock losses is receiving public transfers (see Figure 12). If a herder family benefits from public transfers, for each 1.0 percentage point increase in the livestock mortality rate, the average fall in consumption is 0.28 percent. However, given that these transfers were targeted on other characteristics e.g., presence of a pensioner, households that suffered more severe livestock losses were no more likely to receive transfers that households that did not.

Figure 12: Do public transfers help households to cope with livestock mortality?



Source: HIES-LSMS, 2002-3

[20] We estimated OLS regressions of the (log of) per capita consumption on the household livestock mortality rate and household and community characteristics.

Households estimated to be chronically poor are particularly identifiable by the severity of their disadvantage. First, they exhibit consumption levels that are one third that of the non vulnerable and less than half of the vulnerable. Second, they are less likely to receive public transfers, and when they do, receive much smaller amounts: on average, less than one sixth of what households in the two other groups receive. Third, chronically poor households are larger in size; they have more than 5 members compared to less than 4 for the rest of herder families. Fourth, they own substantially less livestock than the other two groups. Fifth, they are more likely to be in the Western region (43 percent) and in the Highlands (27 percent).

The contribution of livestock mortality to vulnerability to poverty

Thirty three percent of Mongolia's herder households were poor in 2002. But poverty is a stochastic phenomenon; some households that are poor today may not be poor tomorrow. More importantly, some who are not poor today may be poor tomorrow. The observed poverty level of a household is an ex-post measure of well-being. Vulnerability, on the other hand, is an ex-ante measure of well-being. It reflects the future prospects of the household, including the likelihood that the household will fall into poverty as a result of experiencing adverse shocks. The presence of risk is what distinguishes these two indicators.

To what extent are herder households vulnerable to future poverty as a result of livestock mortality? Simulations indicate that while one out of three herder households were poor in 2002:[21]

- Two out of every three of the herder households are vulnerable to poverty
- Two out of five households face a non-negligible likelihood of future poverty because of adverse livestock mortality shocks
- One out of four households estimated to be chronically poor—i.e., they would be poor even in the absence of livestock mortality shocks
- Only one out of three herder households can be thought of as relatively secure

Table 15 provides details regarding this three-way classification of herder households in to those who are non-vulnerable, those who are vulnerable to poverty and those who are chronically poor. A comparison of the profiles of the three groups clearly highlights the distinctions between them. Households estimated to be chronically poor are particularly identifiable by the severity of their disadvantage. First, they exhibit

[21] In order to measure the degree of vulnerability among herder households we needed to simulate aggregate shocks and evaluate how they translate into household livestock mortality rates and their impact on consumption. Given that for each soum we had the historical distribution of the covariate shock; Monte Carlo simulations (1,000 replications for each of the 782 herder households) were implemented. First, for each household, soum mortality rates were randomly drawn from the 33-year empirical distribution of its respective soum. Second, that measure of the aggregate shock, together with the coefficients and residuals from the household livestock mortality rates, generated a "simulated" value for the household mortality shock. Third, we plugged that in (as part of the same replication) into the consumption regression to generate a "simulated" value of consumption. Fourth, using the predicted consumption and the poverty line, we were able to classify households into non-vulnerable, vulnerable and chronically poor.

consumption levels that are one third that of the non vulnerable and less than half of the vulnerable. Second, they are less likely to receive public transfers, and when they do, receive much smaller amounts: on average, less than one sixth of what households in the two other groups receive. Third, chronically poor households are larger in size; they have more than 5 members compared to less than 4 for the rest of herder families. Fourth, they own substantially less livestock than the other two groups. Fifth, they are more likely to be in the Western region (43 percent) and in the Highlands (27 percent).

Table 15: A profile of the vulnerable and chronically poor among herder households

	Non-vulnerable	Vulnerable to poverty	Chronically poor
Share of all herder households (%)	33.1	40.7	26.2
Per-capita monthly consumption (Tg)	51269.3	41048.9	17597.3
Per-capita monthly public transfers (Tg)	2342.3	2412.1	383.0
Fraction of households receiving public transfers (%)	48.2	46.3	36.2
Household size	3.8	3.9	5.3
Share of adult males in household (%)	31.2	29.4	26.3
Per-capita herd size	10.5	13.0	5.2
Fraction of households in soums with good roads (%)	16.5	15.6	7.1
Mean distance to weekly market (km)	35.2	29.6	21.8
Mean hours to aimag center	3.0	3.5	4.7
Fraction in Western region (%)	14.5	19.5	36.6
Fraction in Highlands region (%)	40.2	41.7	42.0
Fraction in Central region (%)	27.4	21.8	12.7
Fraction in Eastern region (%)	12.3	17.1	7.7
Fraction in Ulaanbaatar (%)	5.6	0.0	1.1

Source: analysis of HIES-LSMS 2002.

Options to consider

While shocks, such as widespread *dzuds* or drought are undeniably an important source of livestock mortality, idiosyncratic or highly localized factors are also critical in determining the incidence of livestock mortality at the household level. Policies to help herder households have to go beyond interventions/responses that are triggered by catastrophic events. Public action is needed on an ongoing basis to help households cope with livestock mortality shocks that are highly localized, perhaps even limited to individual households, and should include both ex-ante risk-reducing measures (see Box 4) and ex-post schemes that are targeted at the household level.

Furthermore, there is a core group (about 26 percent) of chronically poor herder households—distinguished by large families and very small herds— that warrants government's assistance. The consensus in Mongolia is that this group of chronically poor herder households lacks the necessary herding skills and should leave the livestock sector. Their herd size is too small to make a living and herd improvement is too expensive for small herd sizes; furthermore, they are contributing to over-grazing of close-in areas. Alternative sources of income need to be identified and developed for this group of herders. An option to consider is a herder-buyout program. However, a well-designed herder-buyout program that avoids all the associated problems of moral hazard is not an easy task. Further analyses will be needed to assess if a herder buyout

program is a viable option for Mongolia. (Box 5) Other options to keep these herders out of the livestock sector include an improvement of the rural investment climate and strengthening supply chains for livestock-based activities. (see Box 6) During the 1999-2001 *dzuds*, a proportion of the herder households with unsustainably small herd sizes had left the livestock sector and ventured into artisanal mining. Acknowledging that artisanal mining is an important livelihood option for the rural population, the government moves away from prohibition to regulation of artisanal mining. However, the wording of the draft law on artisanal mining has to be revised so it will be effectively a positive development for the rural poor. (see Box 7)

Box 4: One example of ex-ante measure to reduce risks

The World Bank funded Government of Mongolia Project on index-based livestock insurance is being implemented in three provinces. It consists of two components, the Base Insurance Product, offered by private insurance companies, and the Disaster Response Product, a social safety net financed entirely by the government. The insurance scheme is designed to pay out to individual herders whenever the livestock mortality rate in the *soum* exceeds a specific threshold (in the range of 7 to 10 percent, depending on species and location). Insurance payments would be directly linked to *soum*-level mortality and not to individual herders' livestock losses. As a result, herders retain small losses that do not affect the viability of their business while larger losses are transferred to the private insurance industry initially and then to the government, when *soum* losses exceeds a threshold, through the Disaster Response Product. The demand assessment indicates that the low and medium income herders are more interested in purchasing insurance than richer herders. The main reason is that the lower income herders have smaller size herds and tend not to travel long distances to avoid risks and are less able to prepare enough feed and fodder to keep their livestock alive during harsh weather.

Source: *Mongolia Index-based Livestock Insurance Project Appraisal Document,* The World Bank, 2005.

Box 5: Cash-out or buy-out programs

It is certainly not an easy task to design a herder cash-out program that has well-aligned incentives. Furthermore, it may not be a suitable option for the case in Mongolia. However, it is an option to consider. There are many examples in the OECD on farmer buyout programs. One such example is the tobacco buyout program in the US. Since the 1930s, tobacco production and marketing in the U.S. has been subject to a federal price support and supply control program. However, in the last 10 years, the tobacco production industry has encountered problems such as lower domestic demand, declining exports, increasing foreign imports, escalating lease rates, and reduced marketing quotas.

As a result, a tobacco buyout program was initiated in 2004 to compensate and assist tobacco farmers out of the sector or make the transition from the old system to the free market. The Equitable Tobacco Reform Act establishes the Tobacco Transition Payment Program that provides annual transitional payments for 10 years to eligible tobacco producers. In Australia, milk marketing support schemes were eliminated on 1st July 2000 through the Dairy Industry Adjustment Bill that provides eligible dairy farmers with Dairy Structural Adjustment Payments over 8 years in quarterly installments, or the option of a lump sum tax free Dairy Exit Payments in the first two years of the program, where a farmer wishes to leave farming. In addition, the Government's Dairy Regional Assistance Program was set up to stimulate investment and job growth in communities formerly dependent on the dairy industry and needing extra support due to deregulation of the industry. The Program provides direct assistance to rural Australians wanting to set up or expand new industries and also helps these people find markets to complement their new ventures, as well as diversify their skills base and attract private investment.

Source: Various news pieces available on the web.

Box 6: Ways to strengthen supply chains for livestock-based activities

For instance, in the cashmere sector, the set of public actions to facilitate marketing and improve supply chain linkages include infrastructure upgrading, research and development facilities, herder education, improvements in communication facilities, and market facilities. A modernized legal environment is necessary to support development of private finance and insurance, land, fodder, and water supply markets. The government should also support development of intermediary production and distribution services such as warehousing, grading, veterinary services, transportation, and other business development services.

Source: *From Goats to Coats: institutional reform in Mongolia's cashmere sector*, the World Bank. 2003.

Box 7: Regulating instead of eliminating or prohibiting artisanal mining

While it is not clear that the proposed law will adequately regulate and control artisanal mining, the government has come to realize that artisanal mining has become a key livelihood strategy for many impoverished Mongolians and therefore should be regularized and not eliminated. While the draft law aims at curbing illegal mining and providing a new legal framework for those who practice it, the current wording of the law may actually raise barriers to entry and costs of continued participation. It is feared that the proposed law would then result in the creation of two classes of artisanal miners: an authorized elite and a larger group of "illegals".

Source: *Mongolia's Mining Sector Sources of Growth,* the World Bank, 2004.

Chapter Four: Improving Educational Opportunity and Quality in Rural Areas

- Rural children tend to be left out of upper secondary schooling because of lack of access; poor educational quality; and poverty.
- Policies to align incentives for teachers to be in rural schools; revise resource allocating formula to favor rural schools; and target public assistance directly at poor households could potentially improve schooling outcomes of poor rural children.

Mongolia has a well-educated population for its level of development. According to the HIES-LSMS 2002-3, more than 80 percent of the adult population has finished at least lower (8^{th} grade of) secondary, and more than a fifth have some level of tertiary education. Only one of every twenty adults has not completed primary school. Urban adults on average have higher levels of education than rural residents and women have more years of schooling than men. Similar to other countries, educational attainment is positively correlated with income and consumption. Almost one out of five adults from the poorest quintile group completes no more than primary school in contrast to half that share among the wealthiest quintile group. In particular, poverty incidences are not significantly different between those with only lower secondary schooling and those with less than primary schooling. Poverty incidence falls precipitously once upper secondary is attained (NSO, 2004).

Documenting educational outcomes

Using the HIES-LSMS 2002 -3 data, we present in Figure 13 the completion rates by age cohorts. Primary completion rates have been consistently near universal for a couple of generations (a few decades) before dropping modestly during the early 1990s' transition to the market economy; primary completion rates began to show signs of recovery as of 2000-2002. Lower secondary completion rates reached remarkable levels of 93-94 percent by 1980 (i.e., for cohorts aged 39 and younger in year 2002); lower secondary completion rates fell below 90 percent in early 1990s and the rate of recovery has been much more slowly. Upper secondary schooling consists of only two additional years beyond lower secondary level, but their completion rates, while consistently improving, reached only around 70 percent by 1980 (i.e., for cohorts aged 39 and younger in year 2002). Since then, the trend of upper secondary completion rates has been on the decline.

Figure 14 presents net enrollment rates of primary, lower secondary and upper secondary levels by geographical strata and household consumption quintile groups. The gaps of net enrollment rates, between remote rural areas and urban areas as well as between the poor and the rich, are most acute at upper secondary level. Expectedly, completion rates in Figure 15 also show the acute gaps in upper secondary levels between rural and urban children as well as between the richer and poorer children. A

disproportionately large percentage of children from the poorest quintile of household consumption and that of remote rural children drop out after the end of lower secondary level (Grade 8).

Figure 13: Primary completion rate has recovered much more rapidly than lower or upper secondary completion rates in recent years

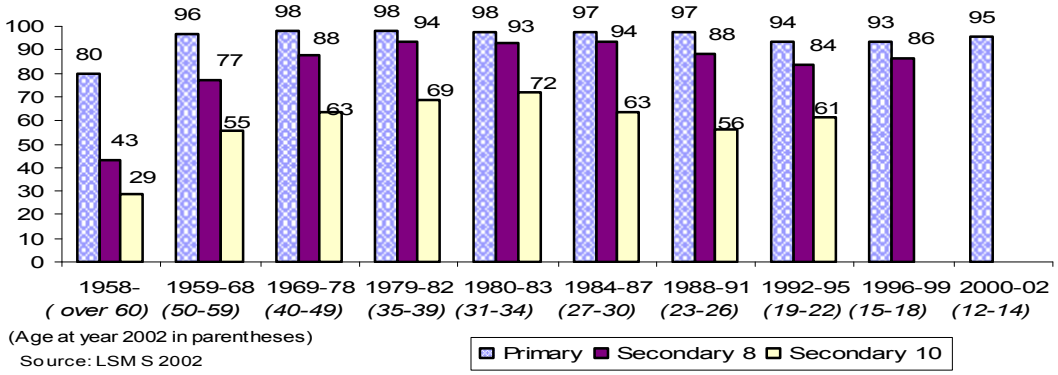
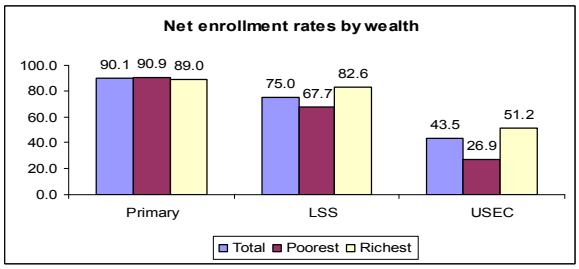
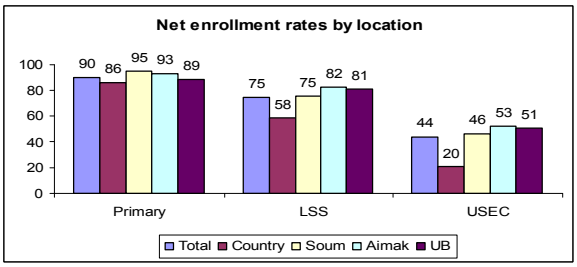


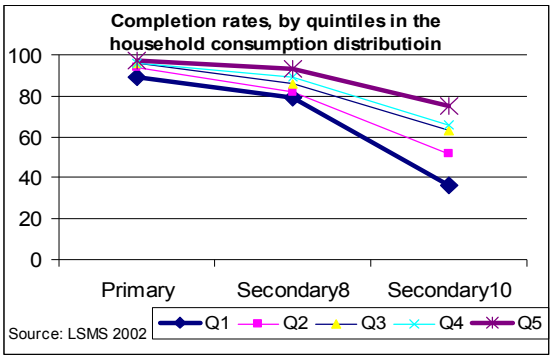
Figure 14: Acute gaps of upper secondary enrolment between rural and urban as well as between richest and poorest

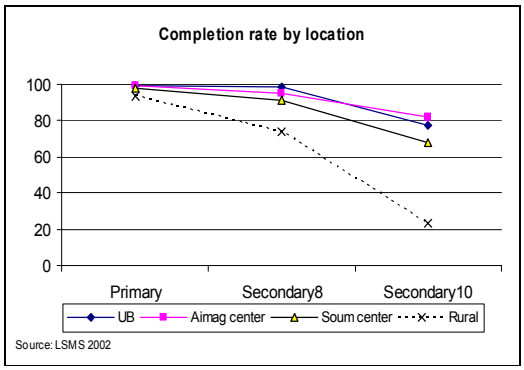




Source: LSMS 2002
Note: LSS: lower secondary schooling; USEC: upper secondary schooling; "country" denotes countryside/bagh

Figure 15: Acute gaps in completion rates in upper secondary, by household consumption levels and by locations





In view of the high attrition rates at Grade 8 especially among rural poor children, this chapter attempts to understand the factors determining transition to upper secondary school by analyzing supply factors (e.g., access; school inputs); educational quality (e.g., student performance at national examinations); and demand factors (e.g., family background).

Access to upper secondary

Public schools are widespread in the country, particularly for primary and secondary. Less than 2 percent of students attending those levels go to private school. The economic difficulties in the early transition had severely impacted the maintenance of school facilities, the delivery of school inputs, and the overall provision of education services. Due to high costs of delivering the services in a vast and sparsely populated territory with harsh and long weather, the government found it difficult to maintain pre-transition funding levels in real terms. To cope with the economic hardship, the government implemented a series of reforms. Among them was the imposition of dormitory fees (1996-2000), where students were only accommodated in school dormitories if their parents paid for meals. This policy, also known as the "meat requirement," was widely seen to be the culprit for escalating drop-out and non-enrollment rates. Another set of policies was the rationalization of staff and reorganization of schools (since 1997). Schools were "rationalized," in that the number of staff and teachers was drastically reduced, and schools were either shut down or re-organized. The reorganization of schools was a comprehensive reform targeting schooling at all levels: village (bagh), rural district (soum), provincial (aimag) centers as well as cities. The reorganization has three strategies: (1) to close down small bagh schools, (2) to discontinue grades 9 and 10 in *soum* schools, and (3) to merge schools in cities and *aimag*-centers into. As a result, upper secondary Grades 9 and 10 is no longer available in rural areas and spaces for Grades 9 and 10 in merged or consolidated *aimag* schools are significantly reduced as well. The government then applies an implicit supply rationing policy where only 70 percent of the students in Grade 8 transit to upper secondary school based on their performance on state-administered (Grade 8) examinations in Mathematics and the Mongolian language.

The role of family background and poverty

Using multivariate probit regression analyses, we analyze the likelihood of dropping out at various levels vis-à-vis students' family background. We include detailed parental educational attainment, strata and regions of residence, a binary variable denoting whether the household lives below the poverty line, and gender of the child as family background variables. Table 16 shows that boys with similar observable family background are more likely than girls to drop out even at the lower secondary level. The chances that boys would drop out at the upper secondary level are significantly higher than for girls.

Similarly to findings in other countries, the educational attainment of parents in Mongolia also plays an important role. Children with post-secondary educated parents are significantly less likely to drop out in every level of schooling. The positive influence of parents' educational attainment is especially important (i.e., with significantly larger positive coefficients) for children's attainment at the upper secondary level.

The most important finding from the regression analyses is that the negative impact of poverty on a child's dropout from school is significant at every level of schooling, even at the primary level where completion rates are near universal. Furthermore, this adverse impact of poverty on dropout is still significant even after taking into account parental educational attainment and other pre-determined family background such as location of residence. The magnitude of this negative impact of poverty increases significantly across schooling levels, reaching the largest effect on upper secondary dropout. Among children with similar parental background and other observable household characteristics, those living in poverty are 21 percent more likely than the non-poor to drop out of upper secondary. This finding suggests that poverty directly, through out-of-pocket and opportunity costs, as well as indirectly, through family/parental background, affects children's educational outcomes (Table 16). Findings from focus-group discussions in various parts of the country suggest that schools collect a multitude of informal fees and the total amount is a burden for the poor. Many also complain about discrimination by teachers based on appearance.

> *"Children from poor families cannot get to school...Even indeginous people with complete papers cannot afford schooling for their children and are getting two out of 3-4 kids out of school. They are collecting waste now".*
>
> *"Children from extremely poor families have no clothes to wear, are discriminated for this and eventually drop out of school. Children are afraid of harassment by teachers, those who cannot come up with the money for all kinds of informal fees run from school".*
>
> *Focus group discussion in Khanuul district, Khoroo 9*

Another finding from focus-group discussions is that lack of paperworks and in particular, up-to-date national identity cards with current addresses, is a barrier to enrollment in school. Thus, the benefits for a universal campaign to register all citizens especially the poor migrants or remote poor go beyond improving outreach of public

transfers to the poor as discussed in Chapter 4 to ensuring that they have equal access to public services such as schooling (and also healthcare).

"One of our children had to miss one year and start all over the same grade in the following year. The school did not accept her claiming that the transfer documentation was incomplete. Relatives helped to get her in a school in Hailast, which she attends now"

"My younger sibling has not been able to start school and has been a drop out for three years now. The reason is incomplete documentation of transfer from rural area. It is also difficult because he comes from a poor family and cannot pay all the informal fees the teachers require."

Focus group discussion in Songinokhairhan district, Khoroo 7

Table 16: Family background and poverty affect dropout at all levels of schooling

Depentant variable: **Dropout (binary variable)**	***dropout*** before completing Primary School		***dropout*** before completing Lower Secondary School		***dropout*** before completing Upper Secondary School	
Male	0.015	0.011	0.058***	0.048***	0.185***	0.231***
	(1.58)	(1.44)	(3.93)	(4.21)	(6.25)	(7.38)
West	0.031	0.023	0.105***	0.052**	0.188***	0.126**
	(1.53)	(1.38)	(3.41)	(2.25)	(3.76)	(2.40)
Highlands	0.038**	0.025	0.132***	0.078***	0.274***	0.197***
	(2.05)	(1.66)	(4.95)	(3.79)	(6.40)	(4.37)
Central	0.027	0.018	0.068**	0.020	0.090	0.020
	(1.41)	(1.20)	(2.51)	(1.10)	(1.95)	(0.49)
East	0.066**	0.037	0.137***	0.053**	0.243***	0.174***
	(2.50)	(1.83)	(3.74)	(2.02)	(4.35)	(2.97)
Mother education (secondary)		-0.002		-0.031**		0.000
		(0.26)		(2.49)		(0.01)
Mother education (complete sec)		-0.018		-0.059***		-0.187***
		(1.83)		(4.53)		(4.14)
Mother education (vocational)		-0.021**		-0.055***		-0.196***
		(2.04)		(4.08)		(3.77)
Mother education (higher)		-0.026**		-0.097***		-0.238***
		(2.32)		(6.04)		(5.73)
Father education (secondary)		-0.019**		-0.041***		-0.020
		(2.50)		(3.53)		(0.43)
Father education (complete sec)		-0.017		-0.067***		-0.263***
		(1.76)		(4.91)		(6.24)
Father education (vocational)		-0.018		-0.052***		-0.227***
		(1.63)		(3.05)		(3.82)
Father education (higher)		-0.023**		-0.075***		-0.252***
		(2.07)		(4.84)		(6.06)
Poverty	0.041***	0.021**	0.080***	0.027**	0.267***	0.206***
	(3.89)	(2.45)	(5.09)	(2.31)	(8.58)	(6.26)
Observations	1301	1301	1614	1614	1129	1129

Source: HIES-LSMS 2002-3
Note: Absolute value of t statistics in parentheses. ** significant at 5%; *** significant at 1%

Educational quality and school location

As noted earlier, because of the limited upper secondary spaces as a result from rationalization and reorganization, at least 30 percent of students are screened out based on their performance in national examinations in mathematics and the Mongolian language. Using the Grade 8 national examination results in Mathematics and the Mongolian language from all schools in the country, we examine the relationship of national examination results and school characteristics in multivariate regression analyses. The examination results also provide us a proxy for quality of education, and

allow us to investigate the link between quality of education and its determinants. For brevity, we only present the proportion of students with the grade "A" and for examination results in Mathematics. Using other measures of performance such as the proportion of students with failing grades "D and F" yield similar findings.

Table 17 presents the regression results of student performance and school-specific characteristics based on the administrative database from the Ministry of Culture, Science and Education for year 2002. The results suggest that (soum) rural schools have significantly worse student performance in Grade 8 "screening" examination to upper secondary than urban (e.g., aimag centers or Ulaanbaatar) schools, even after controlling for regional effects, school types, and size of school. This result also holds for student performance in the Mongolian language at Grade 8 "screening" examination. The finding suggests that (soum) rural schools with the identical type (e.g., Grade 1-8) and similar size (e.g., small with fewer than 50 students) as an aimag-center school in the same region (e.g., West) have significantly weaker student performance or worse educational quality.

Table 17: Rural (soum) schools have worse student performance than aimag-center or Ulaanbaatar schools of similar type and size within the same region

dependent variable % students with grade "A" in math	8th grade "screening exam" for admission into upper secondary [1]	[2]	[3]
School 1-8	-5.538**	-2.008	-3.55
	(2.95)	(1.1)	(1.63)
West	-6.896*	0.803	0.987
	(2.07)	(0.22)	(0.27)
Highlands	-9.816**	-2.271	-2.167
	(3.1)	(0.63)	(0.61)
Central	-10.747**	-2.871	-2.818
	(3.34)	(0.8)	(0.79)
East	-13.360**	-9.345**	-9.092**
	(4.13)	(2.84)	(2.68)
Soum		-12.176**	-12.252**
		(5.32)	(4.57)
Medium-size school			-3.404
			(1.48)
Large-size school			-2.34
			(0.73)
Constant	32.073**	31.508**	33.598**
	(13.16)	(13.22)	(8.92)
Observations	467	467	467
Adjusted R-squared	0.07	0.13	0.14

Source: Ministry of Culture, Science, and Education
Note: Robust t statistics in parentheses. ** significant at 5%; *** significant at 1%

Poverty incidence is higher in rural areas, as are poverty gap and poverty severity measures—and an estimated 54 percent of the poor are from rural areas (NSO, 2004). Thus, rural students who tend to perform worse and drop out after the 8th grade are highly likely to be poor as well. Combining the HIES-LSMS 2002-3 data that have soum-level characteristics and the database of examination results of all schools in Mongolia for the year 2002, we compare among 49 soums in multivariate regressions to examine whether soum-level poverty has any effect on student performance. Given

that some soums have more than one school, we correct in the standard errors for potential correlations among schools from the same soums in our regressions.

Table 18 shows that schools in poorer soums (measured by higher poverty incidence) have worse student performance. This result is robust to additional controls of regional effects as well as economic activity of soums. Table 18 also suggests that soums that rely heavily on livestock husbandry, measured by soum per capita *bods*, also experience worse student performance.

Table 18: Student performance or quality of education is worse in schools located in poorer soums than those in richer soums

Depentant variable:	8th grade "screening" exam for admission to upper secondary		
Proportion of students with grade "A" on Mongolian exam	[1]	[2]	[3]
Poverty at soum level	-.2488***	-0.198***	-0.142**
	(3.17)	(2.69)	(2.53)
Per capita "bods" at soum level		-2.370***	-1.805***
		(8.40)	(4.7)
West			-6.647**
			(2.56)
Highlands			-4.778
			(1.43)
Central			-8.853**
			(2.55)
East			-3.760
			(0.74)
Observations	187	187	187
Adjusted R-squared	0.04	0.12	0.14
Number of soums	49	49	49

Source: Ministry of Education, Science, and Culture and HIES-LSMS 2002
Note: Robust t statistics in parentheses. ** significant at 5%; *** significant at 1%

Educational quality and school inputs

The results on educational quality and school characteristics, and in particular rural remoteness are also reflected in the recently completed Public Expenditure Tracking Survey (see Box 8). Table 19 presents a summary of the regression analysis of student examination performance in Grade 8 and school inputs. Teacher quality and experiences; remoteness of school; and school wealth are the most important correlates of student performance or educational quality. Students tend to perform significantly better in schools with better teacher quality and experiences, measured by teacher salary and the proportion of teachers with the rank of advisor. School wealth measured by the allocation of school budget to teacher salary and purchase of uniforms is also associated with higher student test scores in 4^{th} and 8^{th} grades in mathematics and Mongolian language. The percentage of school budget spent on transportation and on dormitory food expenses, which are measures for rural location and remoteness, have a significant dampening effects on student performance.

The presence of experienced teachers and how teacher salary is determined are highly correlated with the location of schools. A teacher earns on average Tg 103,657 per year. Only 59 percent of the salary consists of a clearly regulated base salary. The remaining portion of the salary is determined by the amount a teacher receives as salary supplements, teaching additional hours, bonus, and performing other types of services. The option to earn more income by teaching additional hours is only available in large schools that offer several classes in each grade level. Such large schools are typically located in the cities (Ulaanbaatar, Erdenet, Darkhan) and in aimag-centers. Teachers in small soum schools face the opposite situation: the teachers rarely manage to secure even a full teaching load of 19 hours per week, and have to accept salary reduction. Thus, the current salary structure of teachers makes it unattractive to teach in rural areas. Teachers that are promoted to a higher rank (i.e., lead teacher, methodologist, advisor) tend to leave for a larger school in aimag centers or cities. As a result, most of the teachers in soum schools have very little experience and according to the Public Expenditure Tracking Survey data, about 30 percent of teachers in city schools are of the rank of lead teachers compared to less than 10 percent of teachers in rural schools with that rank. Furthermore, bonuses to teachers are given according to student performance, which provides an incentive for teachers to get rid of 'poor performers' who tend to be children from disadvantaged families. Bonuses are given out at the discretion of the school principal whose situation is made powerful particularly in very remote areas where the school provides the only source of formal income.

Table 19: Quality and experiences of teachers as well as remoteness of school are among the most inputs for student performance or educational quality

Dependent variable: Student composite test scores	**[1]**	**[2]**	**[3]**
Staff salary and additional salary (% total 2004)	0.316	0.244	0.202
	0.00	*0.01*	*0.02*
Transportation (gas) (% total 2004)	-0.300	-0.268	-0.309
	0.001	*0.002*	*0.000*
Lesson and practical training (% 2004)	-0.169	-0.159	-0.141
	0.046	*0.055*	*0.069*
Uniform and soft apparel purchase (% 2004)	0.149	0.187	0.213
	0.080	*0.028*	*0.008*
Dormitory food expenses (% 2004)	-0.390	-0.275	-0.239
	0.000	*0.006*	*0.010*
School Size		0.239	0.178
		0.018	*0.061*
Teachers with the ranks of Advisors (%)			0.316
			0.000
Number of Obs	105	105	105
R Square	0.351	0.388	0.476

Source: Public Expenditure Tracking Survey
Note: p-values in italic below the estimated beta coefficients

Box 8: The Public Expenditure Tracking Survey and its major findings

The Public Expenditure Tracking Survey collects information about the flow of finance and actual allocation of resources across three levels of the education sector: central level (Ministry of Education, Science and Culture and Ministry of Finance), aimag-level (21 aimags and Ulaanbaatar), and school level (118 schools). Approximately one-fifth of the country's public schools were included in the sample. The sample represents all regions and both UB, aimag, soum and bagh level schools. The school level database is comprehensive and includes, besides detailed school budget information for FY 2004 and 2005, a wealth of information on school characteristics, teacher characteristics, learning conditions, student performance and teacher salaries. In total, 1,355 individuals were surveyed (i.e., teachers, school managers, students, etc) and 1,269 fact sheets on school budget and teacher salaries were collected and processed. The study was two-phased: quantitative and qualitative. The quantitative study was based on structured surveys and fact sheets that were administered in 118 schools. The quantitative phase was completed in March 2005, and the qualitative study in two aimags (Bulgan and Gobi-Altai) took place in June and July 2005.

Respondents at the school-level commented positively on the timely and predicable transfer of funds into the school account. Without any exception, interviewees in the Survey identified the new re-allocation practice as a great improvement. Prior to the 2002, re-allocations at the beginning and throughout the fiscal year were common practice. Local and aimag-level governments were given fiscal decision-making authority for all sectors. Funds earmarked for one sector could be re-allocated to state institutions in another sector. The decentralized system made schools vulnerable and dependent on the goodwill of local governors. The re-centralization of education finance, introduced by the 2002 Public Sector Management and Finance Law, was evaluated positively. The surveyed schools preferred that re-allocation decisions were now made by Ministry of Education, Culture and Science and the Education and Culture Departments (in the aimags) rather than by the local government.

Findings from the Survey point at the vast inequalities between rural and urban schools in Mongolia. The average annual teacher salary reflects significant rural-urban differences. The current salary structure makes it unattractive to teach in small rural schools. Very small schools (< 350 students), typically located in baghs, spend a disproportional amount on heating, maintenance and small repair. The poor physical condition of these very small schools accounts for the fact that the cost for maintenance and repairs are 15-18 times higher, and the per student cost for heating are 3-4 times higher than for large and very large schools. A resizing and capital investment plan will be crucial for very small schools in baghs.

Source: Mongolia's Public Expenditure Tracking Survey in Education Sector, a background report of EASHD and OSF (2006).

Recommendations

Despite progress in school attendance in the past few years, rural students are still at a disadvantage. In particular, rural students do not have equal access to upper secondary education because rural schools shut down Grades 9 and 10 during the 1997 reorganization and rationalization reform while consolidated urban (aimag center and city) schools have only limited spaces. Attrition rates are significantly higher among rural children and educational quality, measured by examination results, is significantly worse in rural schools. Students in rural schools perform less well in examinations than students from urban areas; furthermore, examination performance in poorer soums is significantly worse than that in richer soums. In addition, poverty directly, through out-of-pocket and opportunity costs, and indirectly, through parental background, contributes to dropout at all levels of schooling. Rural students who tend to perform worse and drop out after the Grade 8 are highly likely to be poor. This attrition or dropout raises concern given its long term implications from the vicious circle or inter-generational transmission of poverty.

For all the good intentions it may have, the rationalization and reorganization effort initiated in 1997 seems to perpetuate the widening gaps in educational outcomes between urban (aimag centers and cities) and rural (soum) schools. The report recommends that options such as reopening Grades 9 and10 in rural schools; expanding dormitory spaces in aimag schools; and targeting dormitory subsidies at poor rural households be considered and implemented to improve access for rural children. In addition, the report urges that incentives embedded in teacher compensation packages be re-aligned to attract teachers and staff to rural schools and that central resources be allocated to favor rural schools.

Chapter Five: Addressing Heating Needs of Poor Ulaanbaatar *Ger* Dwellers

- Poverty concern in the energy sector is related to heating expenditure. In particular, heating during winter months constitutes an acute burden problem for poor *ger* households in Ulaanbaatar.
- A one-time trade in of inefficient stoves in exchange of efficient stoves to the poor *ger* residents may be a cost-effective way to address both heating needs of the poor and negative externalities of pollution from dirty fuel. This trade-in scheme has to be implemented along with an information campaign about the benefits of efficient stoves. Furthermore, to discourage the production of inefficient stoves, the authorities will need to tax inefficient stoves and subsidize efficient stoves.

Electricity – a non-poverty issue

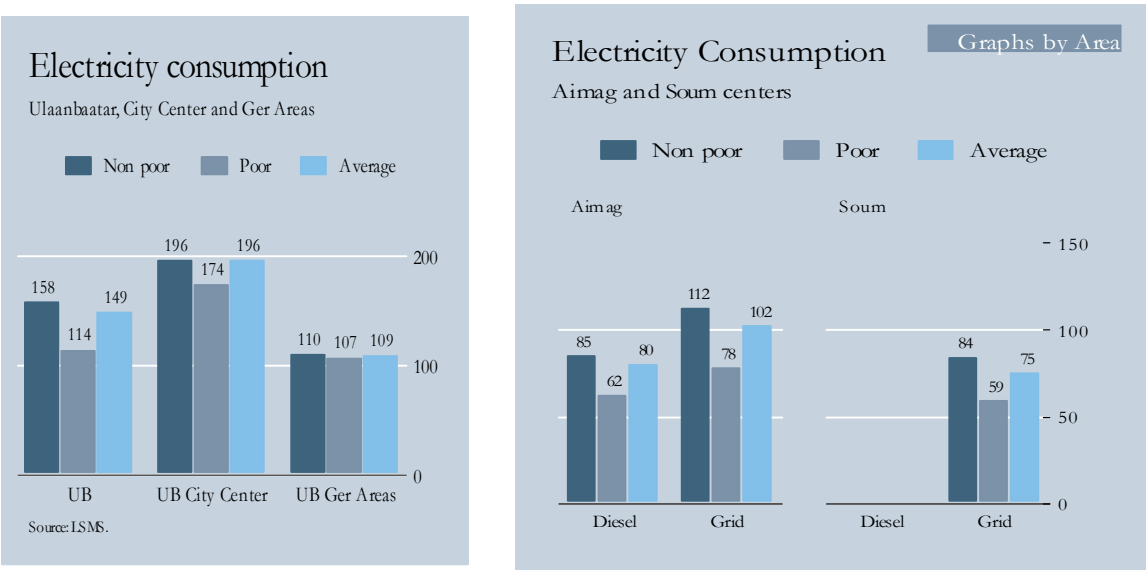
Mongolia's population has relatively good access to electricity. The quality and reliability of electricity service provision, however, varies. Besides off-grid solutions (e.g., solar power, wind home system and small electric generators), there are two main options for electricity provision in Mongolia: the country main grid system (the Central Electricity System) or isolated grids supplied by diesel stations.[22] Virtually every household in Ulaanbaatar and aimag centers, and the vast majority of households in soum centers, have access to electricity. to a significant extent across geographic areas. In the countryside, in contrast, 70 percent of the households do not have access to electricity at all.

Electricity consumption appears to be a poor indicator of poverty. In rural areas, the non-poor are just as likely as the poor not to have access to electricity. In urban areas, there is no difference in the likelihood of access to electricity between the poor and the non-poor. In terms of absolute expenditure levels, electricity consumption of the poor and non-poor households are not significantly different within UB *ger* areas, the UB city center, aimag centers, and soums. (see Figure 16) The different level of electricity consumption among poor and non-poor households is consistent with international evidence that income is positively associated with electricity consumption – as income rises, households tend to consume more electricity. However, under-reporting of electricity consumption due to pilfering and/or meter tampering may be playing a role in leveling out electricity consumption across household quintiles. Under-reporting of consumption is also widespread among large un-metered customers, who are the main beneficiaries of the existing un-metered tariff arrangements. The main difference in electricity consumption is related to the reliability and costliness of the services because

[22] The majority of grid connected customers are connected to the Central Grid System. Households in three Western *aimag*s (Bayan-Ulgii, Uvs and Hovd) and two Eastern *aimag*s (Dornod and Suhbaatar) are connected to the significantly smaller Western Electricity System (WES) and Eastern Electricity System (EES). Households in the Umnugovi *aimag* are supplied by the Dahanzadgad power plant.

the electricity is not regulated in a uniform manner. This in turn depends on the source of electricity supplier (e.g., grid versus diesel station) by localities.

Figure 16: Electricity consumption does not differ significantly by poverty status



At the end of 2004, the Energy Regulatory Authority (ERA) approved a tariff increase for residential end-users, from 47 Tugrug/Kwh to 51 Tugrug/Kwh.[23] The tariff increase is intended to bring user tariffs more in line with the economic cost of service provision. In parallel, the ERA has introduced a lifeline rate for essential consumption to mitigate the impact of tariff increase on vulnerable households.[24] Despite its intentions, ERA did not achieve either goals in practice.

First, while direct subsidies in the Central Electricity Grid have been gradually phased-out, different forms of implicit subsidies are still embedded in the system. For example, across-the-board subsidies for all residential customers are still in place; de facto no-disconnection policy whereby distribution companies implicitly subsidize delinquent customers; new connection charges are well below cost recovery levels; and un-metered tariff arrangements still exist. The overall tariff reform also did not succeed in increasing overall revenues accrued to the distribution company. In addition, the subsidy for the lifeline tariff is unfunded and has to be borne by distribution companies.

Second, some 85 percent of the benefits of the lifeline tariff accrued to non-poor households. There are two reasons behind the high level of leakage to non-poor

[23] 15 percent V.A.T. has been included to calculate budget shares.
[24] A lifeline is a pricing structure that charges customers a below-cost tariff rate (the lifeline rate) up to the subsistence level of consumption. Under the recently implemented lifeline tariff, different levels of essential consumptions have been identified in *ger* areas and city center: a 20 percent discount is offered for consumption below 50kwh/month/household in *ger* areas and below 75kwh/month/households respectively in the city center.

households. First, households in the city center who tend to be non-poor receive a higher share (60 percent) of the overall subsidy because the design of the lifeline tariff allows a higher subsistence threshold for city center households. Second, the difference in consumption between poor and non-poor households is simply insignificant especially within *ger* areas, where 90 percent of Ulaanbaatar poor households live.

In summary, the recent reform in the electricity sector did not increase revenue or improve recovery for the distribution companies while implicit supply-side subsidies are absorbing and perpetuating high inefficiency of the systems. Furthermore, the existing subsidy scheme intended to help the poor is benefiting the non-poor. Most importantly, electricity is not a poverty issue whereas heating is, which has received scant attention from the government.

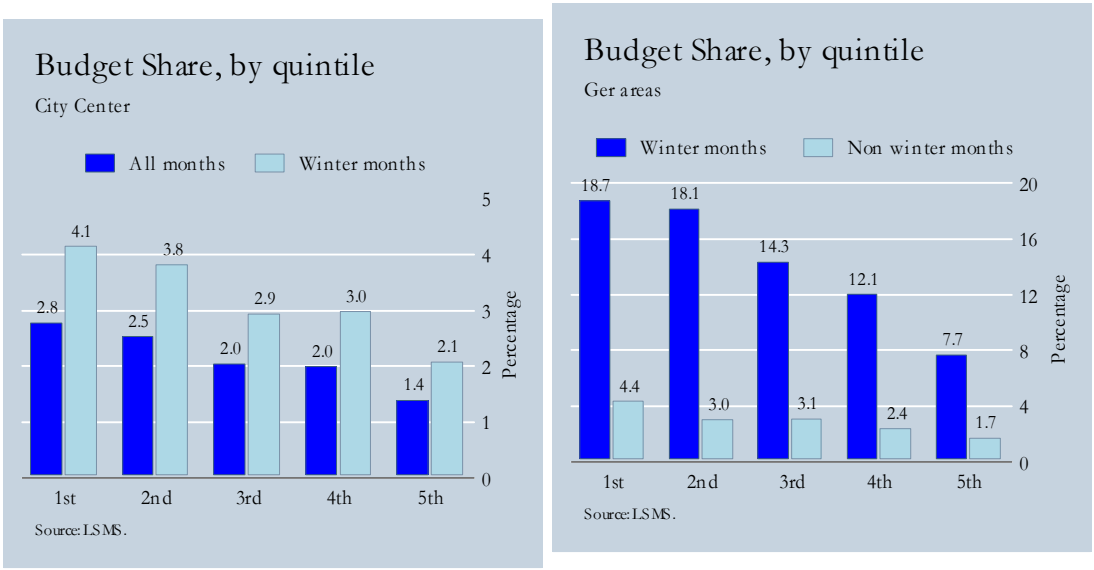
Heating needs – a pressing poverty issue

Winters can be harsh and long in Mongolia, with below freezing temperatures consecutively for six months of the year. The average temperature in Ulaanbaatar for the months of January and February is -25°C, and temperatures can reach -40°C in rural areas. Heating under these conditions is a necessity for survival. There are two main supply options for heat provision in Mongolia, grid or non-grid heating modes. The latter consists of predominantly traditional heating stoves.[25] All households in the Ulaanbaatar city center rely on grid (district) heating for heat and hot water, as are 30 percent of households in aimag centers. The remaining households in aimag centers and virtually all households in Ulaanbaatar *ger* districts and the countryside rely on traditional stoves for heating purposes.

Heat expenditure places the heaviest burden on the budget of *ger* households, the poorest segments of Ulaanbaatar population. The difference in heat expenditure between Ulaanbaatar *ger* areas and city center is striking. In the *ger* areas, where 42 percent of the households are poor, the level of heat expenditure in winter months is multiple times that in Ulaanbaatar city center, where only 7 percent of families are poor. In terms of heating expenditure as a share of total expenditure, the gap is even larger – average per capita monthly expenditure is Tugrug 36,300 in *ger* areas, against an average of Tugrug 66,300 in Ulaanbaatar city center. Heat expenses in winter months for poor households in ger areas are about 20 percent of total expenditure. In contrast, those living in the Ulaanbaatar city center, with connection to the district grid, on average spend only 3 percent of their budget on heating. (Figure 17)

[25] A very small percentage of Mongolia households use alternative heating modes, mainly steam boilers. However, a social impact assessment analysis could not be undertaken for this non-grid solution, due to lack of sufficient observations.

Figure 17: Heating consumption, by quintile in Ulaanbaatar



There is little variation in the level of heating expenditure across different household quintile groups in Ulaanbaatar *ger* areas but the amount (in GigaJoules) and quality (pollutant content) of heat is very different. Higher-income households can better afford the more expensive and more efficient stoves. An efficient stove costs about US$80 a piece while an inefficient stove costs only US$6. Fuel needs for efficient stoves are significantly less. Furthermore, higher-income households can afford cleaner coal; shop around; purchase in bulk; or/and stock up during early winter months. Focus group discussions reveal that poor *ger* households tend to pay higher prices because they do not have the liquidity to buy in bulk or stock up in low-demand months. The poor pay a considerably higher unit price for single and small purchases of coal throughout the winter. Furthermore, they usually can only afford dirty coal; poor quality firewood; or and cheaper substitutes such as other flammable materials as both supplementary and main source of fuel. From focus group discussions, we also note that the poor resort to logging in parks or other public wooded areas for heating fuel. Finally, many poor save by not using heating during the day, and only at night. Although no attempt has been made to quantify the costs of coping mechanism, the results of the qualitative assessment indicates that these coping strategies have also high social costs, in terms of health and environmental effects associated with air pollution and deforestation as well as productivity losses and opportunity costs of time spent collecting heating material.

In rural areas, while households also use traditional stoves for heating, just like Ulaanbaatar *ger* households, they rely more on self-collection of heating fuels instead of purchases of coal or firewood. In particular, animal dung is widely and cheaply available and is indeed the main source of heating fuel for rural households, either engaging in livestock herding or otherwise. Heating consumption is thus relatively

lower, amounting to 2.5 percent and 1.7 percent of total expenditure in *soum* centers and countryside respectively.

> *"Winters are most difficult. If not fed well we get very cold. Summers are easier because whatever income comes is spent on food rather than fuel."*
>
> *"As long as we have firewood we are safe, so we rather go hungry. "Beginning April when heating fuel consumption decreases then there is more left to spend on food"*
>
> *Focus group discussion in Songinokhairhan district, Khoroo 1*

There is an existing social assistance program that provides limited in-kind fuel transfer (wood and coal) to vulnerable groups, defined as households with either an elderly or a disabled family member and a self-reported household income below a threshold. Because of the small sample size of beneficiaries with fuel transfers in the HIES-LSMS 2002-3, we are not able to assess the targeting effectiveness of the scheme. Nonetheless, the program's limited budget of only Tugrug 908.4 mil or US$757,000 in 2003 indicates that the current size of the scheme is inadequate to provide much relief to poor households for their heating needs.

Options to address heating needs

The pressing issue is the high cost of heating for the poor in Ulaanbaatar *ger* areas, not connected to the district grid. We propose consideration of the following options to alleviate heating burden for the poor:[26]

1. Is heating in ger areas a housing problem and will provision of low-cost flat to poor ger residents be a solution?
2. can efficient heating stoves be distributed to all poor ger households in exchange for their inefficient stoves to reduce fuel expenditure?

Preliminary analyses of the first option indicate that It is indeed more efficient to heat a well-insulated flat of 30 squared meter than a ger of 30 squared meter. It takes about 26-30 GigaJoules a year to heat a new and well-insulated flat of 30 squared meter, compared to about 42 GigaJoules (3 tonnes of coal) to heat a ger of similar size with an efficient stove. However, there is much inefficiency and leakage in the District (Grid) Heating System, from generation to distribution. In addition, the fixed costs of setting up a new residential area with new connections are phenomenal and the sustainability

[26] Another option to be considered is the feasibility of establishing a "coal bank" so the poor can purchase reasonably priced "call options" in the summer but only collect and pay for the coal during the deep winter months so they are not subject to high retail prices at the peak of demand. Work is still on-going to look into the supply chains of coal and the information will be available to feed into the Mongolia's Infrastructure Strategy.

and affordability of the services in these new residential areas of low-cost flats need to be considered.

The second option looks promising. An efficient heating stove for the *ger* can significantly reduce coal consumption from as high as 8 tonnes to 3 tonnes during the winter season. Especially for the poor who cannot afford to buy in bulk and who pay about US$45/tonne, this will be a huge saving. Furthermore, an efficient heating stove only costs US$80 and lasts for about 8-10 years. Thus, distribution of efficient heating stoves to all poor households in the ger areas (i.e., 40 percent poverty incidence multiplied by 100,000 households) will only be US$3.2 million, considering that the Government is paying out over US$5 million **a month** just on old-age pension.

Efficient heating stoves will generate significant monetary savings to households, in terms of sustained reductions on fuel consumption. Moreover, switching to more efficient stoves would deliver considerable non-monetary benefits. Positive externalities include the health and environmental benefits of reducing indoor pollution and the opportunity cost of fuel collection. As part of the recently implemented World Bank's financed Improved Heating Stove project, a few types of improved heating stoves have been developed in Ulaanbaatar and have started being distributed through commercial channels.

Recommendation

To address the heating needs of the poor as well as negative externalities, this report recommends that a scheme for trading in inefficient stoves in exchange for efficient stoves in the *ger* districts of Ulaanbaataar be considered. This trade-in scheme has to be implemented with an information campaign about the benefits of efficient stoves. In particular, the poor must recognize the significant cost-saving from sustained reduction of heating fuel from an efficient stove. To target only at the poor, the authorities can make this trade-in scheme a public works project whereby efficient stoves are given out in exchange for a fixed hours of community service, such as garbage collection and street sweeping in the *ger* districts in addition to the requisite of trading in an existing inefficient stove. To discourage production and sale of inefficient stoves, the authorities also need to heavily levy a tax on inefficient stoves and subsidize efficient stoves.

Chapter Six: Increasing Coverage and Reducing Leakage of Public Transfers

- Existing social assistance suffers from extensive leakages and poor coverage of the needy/poor. Even social insurance programs (e.g., state pension) also tend to exclude the poor. Thus, the impacts on public transfers on poverty reduction are extremely limited. Besides the programs' ineffective targeting mechanism, a crucial implementation barrier against reaching the poor is the lack of an up-to-date National Identity Card among the poor population.
- This report recommends that (a) embedding the National Identity Card with a smart chip that stores important particulars of the individual; and (b) launching a country-wide campaign, with mobile registration stations to rural areas, to register and distribute to everyone including street children, free-of-charge, a smart chip-embedded National Identity Card should be immediate Government priority actions.

Introduction

Social safety nets can play a key role in reducing economic insecurity and alleviating poverty, by mitigating adverse shocks on a household's ability to cope. Shocks can be permanent (e.g., disability) or temporary (e.g., unemployment), and can occur at the macro (e.g., natural disasters) or micro (e.g., death of the household head) level. As is fairly common amongst transition economies, the Mongolian government maintains a fairly extensive system of a myriad of social safety net programs, consisting of social insurance (i.e., benefits to cover specific risks such as retirement, unemployment or sickness) and social assistance (ie., benefits to protect disadvantaged or vulnerable groups, including disability or special pensions, and childcare allowances). The eligibility for social welfare under the Social Insurance Laws (1994), the Social Welfare Laws (1995) and the Employment Promotion Law (2001) is summarized in Annex 2.

Casual observations reveal that the current welfare system involves poor performance in targeting the intended beneficiaries. Particularly, the leakage rate, captured by the proportion of those who receive benefits but classified as non-poor, seems to be significant. There are also problems in actual program implementations such as excessive bureaucracy, corruption among government officials, and poor management of the system. This chapter attempts to:

- Document the extent of leakage and coverage of Mongolia's key programs
- Simulate the impacts of reduction in poverty incidence and poverty severity in the absences of public transfers

"In Nalaikh, the few people who receive pension and welfare benefits may be counted as the only people with steady income. Those with such steady income can borrow from shops"

"Welfare benefit of 14,400 TG buys one sack of flour. Retirement pension of 32,000 TG is ebough to buy a packet of flour, rice and five kilos of meat.

Focus group discussion in Nalaikh district, Khoroo 3

Social Assistance

The majority of social assistance programs in Mongolia are targeted at specific vulnerable groups. Poor households with no members that belong to a vulnerable group may thus be excluded from social assistance. The most frequent elements of the law that entitle households to social assistance were disability (5.9 percent); pregnancy; care of infants; and care of full orphans (about 3 percent, respectively). On the other hand, there are also some programs targeted at poor households with own-reported household income of less than 25,400 Tugrug per person per month. Among low income households, care of many children was an additional element that entitled them to social assistance. Households receiving social assistance were larger than average; often had a newborn child; were more likely to include old persons, and a female, widowed or lowly educated household head than were non-recipient households.

Drawing from the HIES- LSMS 2002-3, and using the official consumption-based poverty line of 24,743 Tugrug per person per month (NSO, 2004), we find that leakage of social assistance to non-poor households was substantial. Table 20 shows that as high as 70 percent of non-poor households received some form of social assistance. At the same time, as many as 40 percent of the poor households did not receive any form of social assistance. Furthermore, the average amount of social assistance was higher among non-poor households, at 15,756 Tugrug/month compared to 13,174 Tugrug among poor households.

Table 20: Distribution of social assistance, by poverty status

	% households with social assistance, by poverty status	as % of consumption	Avg Tg/month	% households with social assistance
Poor	60	16.7	13,174	29.8
Non-poor	55	9.8	15,756	70.2
				100.0

Source: HIES-LSMS 2002-3
Note: 1. Social Assistance consists of child allowances, maternity allowances, disability pensions, survivor's pensions, special pensions, and transfers from local government, NGOs, and charitable organizations
2. Poverty is defined as consumption below 24,743 Tugrug per person per month, which is the basket of 2100-calorie food needs and non-food basic needs.

Table 21 shows the recipients of social assistance by pre-transfer consumption quintiles. Social assistance was not particularly pro-poor. Some 57 percent of total

households received social assistance in one form or another. The amount for social assistance was quite small (Tugrug 15,000 per household per month) constituting only a fraction of the amount necessary for basic food needs. Nonetheless, this amount was important for the extreme poor: social assistance on average contributed 24 percent to their household consumption. As many as 26 percent of households in the first quintile did not receive any social assistance whereas half of the households in the richest 2 quintile groups received some form so social assistance. About three quarter of total social assistance benefits was distributed to households in the second and richer quintile groups.

Table 21: Distribution of social assistance

Per capita pre-transfer consumption quintiles	% households within each quintile with social assistance	as % of consumption	Avg Tg/month	% households across quintiles with social assistance
1 (poorest)	74.2	23.9	18,866	26.1
2	55.4	11.3	13,315	19.0
3	54.7	9.5	14,320	18.9
4	55.6	7.6	13,160	19.2
5 (richest)	48.0	6.4	14,623	16.9
				100.0
National	56.6	11.9	14,975	

Source: HIES-LSMS 2002-3

Note: 1. Social Assistance consists of child allowances, maternity allowances, disability pensions, survivor's pensions, special pensions, and transfers from local government, NGOs, and charitable organizations

2. Poverty is defined as consumption below 24,743 Tugrug per person per month, which is the basket of 2100-calorie food needs and non-food basic needs.

Impact of social assistance on poverty reduction

presents the scenarios of poverty in the absence of social assistance. In the simulated absence of social assistance, poverty incidence increased by only 10 percent while poverty severity rose by 43 percent, confirming that there was substantial leakage to non-poor households. While the benefits were insufficient to lift many poor out of poverty, they constituted a significant percentage of the consumption of the extreme poor.

Table 22: A simulation of poverty situations in the absence of social assistance

	Based on actual consumption	**Based on consumption net of (minus) any social assistance benefits**
Poverty		
Incidence	36.1	39.9
Gap	11.0	13.6
Severity	4.7	6.7

Source: HIES-LSMS 2002-3

State Pension

State pension is a significant source of household income where in 2002 a third of the households in the country had at least a family member with regular state pension payment. The average state pension payment a month in 2002 was 33,199 Tugrug which was more than double the benefits from social assistance (Table 23). State pension payment constitutes 5 percent of GDP (81 billion Tugrug of pension payments in 2004 against 1683 billion Tugrug of GDP). Given the benefits' relatively large magnitude and significant share in GDP, Table 23 and
Table 24 present the impact of state pension on poverty reduction even though it is not intended to target or benefit the poor.

About 46 percent of households in the poorest quintile group had a member who received state pension, and state pension payments made up as much as 44 percent of their monthly consumption (Table 23). Despite the magnitude of these benefits, in the simulated absence of state pension, poverty incidence would have increased by only 11 percent. Thus, just like social assistance, state pension payments were not sufficient to lift many out of poverty while particularly important for supplementing the income of the extreme poor (Table 24).

Table 23: Distribution of state (old age) pension

Per capita pre-transfer consumption quintile groups	% households within each quintile with state pension	as % of consumption	Avg Tg/month	% households across quintiles with state pension
1 (poorest)	45.7	44.4	35,089	30.7
2	30.1	28.1	33,580	20.4
3	24.2	23.9	32,012	15.9
4	21.7	19.9	31,868	14.0
5 (richest)	27.1	15.4	32,471	19.1
				100.0
National	29.1	27.4	33,199	

Source: HIES-LSMS 2002-3

Table 24: A simulation of poverty situations in the absence of state pension

	Actual consumption	**Based on consumption net of (minus) state pension payments**
Poverty		
Incidence	36.1	40.7
Gap	11.0	13.9
Severity	4.7	6.6

Source: HIES-LSMS 2002-3

The 'Child MoneyProgram'[27]

The Child Money Program (CMP) was an election campaign promise and started in January 2005. The Government hopes that this program will help decrease the number of children who have dropped out of school, who are living on the streets, and who are illegally involved in child labor. However, it is unclear that the CMP will benefit street children (see Box 9) or poor children who do not have updated identity cards. The option of channeling social assistance (e.g., CMP benefits) through trust funds at the NGOs where services are provided to the street children may also be considered.

Box 9: Street Children

Mongolia's peaceful transition to democracy since 1990 after some 70 years of communism brought many positive changes to the country. However, the transition also resulted in negative impacts such as drastic fall in real income, rise in unemployment, dismantling of safety nets in the socialist system, as well as incases in alcoholism, domestic violence, and homelessness. Street children did not exist before 1990 but now number in the thousands in Ulaanbaatar (between 1000 and 4000, depending on the definitions). About two-third of them aged between 5 and 14 years old, and 70 percent are boys. A number of national and international NGOs (e.g., Save the Children, UNICEF, World Vision, Lotus Children Center, Christina Nobel Children's Foundation, and others) are playing an important role by offering shelter, education, vocational skills, as well as providing meals and bathing facilities to address their immediate needs. However, the government's initiatives have been limited and ad-hoc. The majority of street children have no identity cards which made them ineligible for healthcare or any social services. Furthermore, official statistics from police reports indicate that commercial sexual exploitation of children and juvenile crime are on the rise.

The CMP pays out monthly 3,000 Tugrug (about US$ 2.5) per child to all poor households with children ages 0-18. By December 2005 the program had reached over 600,000 children. In 2006, CMP benefits will amount to 1.4 percent of GDP, making it the largest social assistance program. Regrettably, as this report is going to print, the Mongolia's Cabinet is considering making the CMP universal or untargeted. While there may be political gains in making the CMP universal, this reversal perpetuates the existing problems of costly social assistance with little impact on poverty alleviation.

Implementation problems of CMP

To qualify for the CMP, households must comply with a series of pre-conditions at registration before even being subject to proxy-means testing: (a) Up-to-date national identity cards and marriage certificates of the parents must be presented; (b) Proof of school enrollment of children and complete immunization records must be presented;

[27] A detailed assessment can be found in the EASHD Policy Note, *Assessment of the Child Money Program and Properties of its Targeting Methodology*, 2005.

and (c) children cannot be engaged in abusive forms of labor. Then, households will be asked various questions and proxy-means score will be estimated based on the information supplied. There is also a subjective assessment of poverty status by local governors. While the program was modeled after conditional cash transfer program schemes, once a household is qualified for the program there is no systematic monitoring of compliance with the health, schooling, and child labor conditions. A more serious problem is that many deserving poor are disqualified before they can even register and be tested for eligibility. Most of the poor are unable to present up-to-date national IDs because the direct and indirect costs of acquiring or updating their national IDs can be prohibitively high and they are disqualified for registration; for single parents and households that cannot afford to send their children to school in the first place, they are also disqualified from registration at the outset.

Implementation problems have to be addressed in order to improve the program's effectiveness to reach the poor. In particular, stringent requirement at registration to present a marriage certificate, an up-to-date national ID, and proof of school enrollment has to be relaxed. Also, the poor tend to live in more remote areas and transportation and transaction costs for registration and collection of the transfers can be exorbitant. There is also serious concern about the subjective pre-screening carried out by local governors. According to the Program's regulation, every household is entitled to register but in reality, only households deemed qualified by local governors are allowed to fill out application forms. Furthermore, anecdotal evidence suggests that the proxy-means testing formula is being manipulated by many households –with better education and access to information- who are knowledgeable of the indicators and weights used. Social workers now enter household socio-economic information at registration and the proxy-means scores are also estimated simultaneously. A simple solution to stop household manipulation or collusion with social workers is to only have the local (soum) social workers enter the raw household information while getting the proxy-means scores calculated at a higher level of administration (i.e., aimag or central authorities).

Targeting of the CMP

Besides implementation problems, a secondary problem is the targeting effectiveness of the proxy-means formula for determining eligibility of CMP beneficiaries. Unlike all other existing programs where khoroo, soum[28], and bag[29]governors use own-reported income to determine whether households and citizens are eligible for social welfare benefits and support, the proxy-means testing in the CMP uses 11 proxy indicators.[30] The living standard of a household is determined by estimating the poverty risk ratio (PRR) of each indicator. If the PRR is equal to 1, the household is on the poverty line.

[28] Soum is an administrative unit in aimag (prefecture)
[29] Bag is the smallest administrative unit in aimag
[30] A more complete evaluation of this targeting methodology and a comparison to other alternatives is discussed in *Assessment of the Child Money Program and Properties of its Targeting Methodology*, EASHD Policy Note, 2005.

If the PRR is greater (smaller) than 1, the household has a higher (lower) than average likelihood of falling into poverty. An overall evaluation of a household's living standard is computed by multiplying values of the 11 indicators of a household by the PRRs associated to the groups to which it belongs, summing and averaging over 11. If the resulting number is equal or greater than 1, the household is considered poor or eligible for CMP benefits.

Using the latest available household survey, the 2002-3 HIES-LSMS, we assess the eligibility of CMP vis-à-vis actual consumption poverty. Assuming that the CMP encounters no implementation problems and PRR is applied according to the formula, the simulation exercise indicates that the PRR, by design, has a very large inclusion error (leakage). About half of the eligible beneficiaries of CMP are not poor, by consumption-poverty measure. With regards to its exclusion error, some 22 percent of the poor are not considered eligible under the proxy-means testing formula. (Table 25)

Table 25: Targeting properties of the PRR

Poverty	
Beneficiaries who are poor	114,004
% who are poor	51%
% who are not poor (leakage)	49%
% of poor without benefit (exclusion)	22%

Source: *Assessment of the Child Money Program and Properties of its Targeting Methodology*, EASHD Policy Note, 2005.

When we examine the distribution of leakage and exclusion in Table 26, we find that as high as 40 percent of the eligible beneficiaries have consumption level of over 50 percent above the poverty line and about half of the poor who are ineligible have consumption shortfall of over 20 percent below the poverty line. Thus, the CMP's targeting properties of the PRR can still be improved. For example, refining the categories and weights of household size, number of children, and number of livestock and modifying the weights of these categories to better reflect the relationship of consumption poverty.

Table 26: Distribution of leakage and exclusion

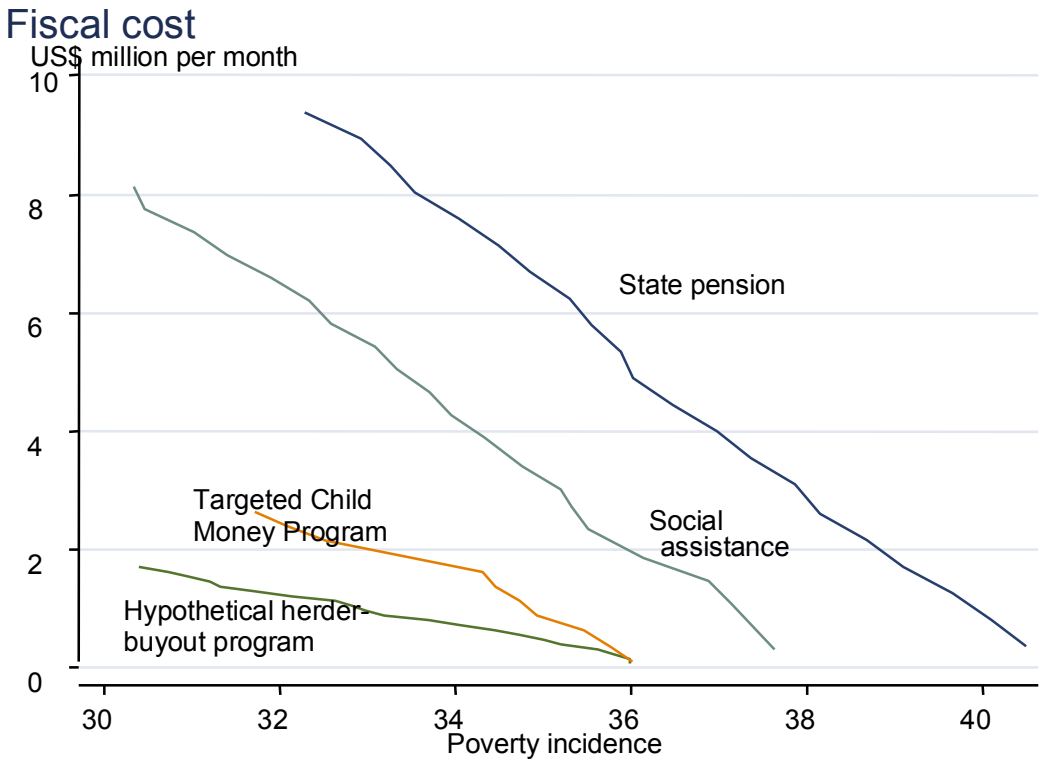
LEAKAGE	
Of those who are non-poor and benefit…	
up to 20 percent above poverty line	28 percent
>20-50 percent above poverty line	31 percent
>50-100 percent above poverty line	22 percent
>100 percent above poverty line	19 percent
EXCLUSION	
Of those who are poor and don't benefit…	
up to 10 percent below poverty line	29 percent
>10-20 percent below poverty line	22 percent
>20-30 percent below poverty line	17 percent
>30 percent below poverty line	31 percent

Source: *Assessment of the Child Money Program and Properties of its Targeting Methodology*, EASHD Policy Note, 2005.

A simulation of fiscal costs and poverty incidence of various social programs

As a summary of the impacts of public transfers, Figure 18 presents the simulated fiscal costs and poverty incidences of state pension (old age), social assistance, the new Child Money Program and a hypothetical herder-buyout program (Chapter 3's Box 5) by varying the average amount of benefits per beneficiary per month. The fiscal costs of social assistance and state pension were US$ 2 million and US$ 5 million a month, respectively, in 2002 with the poverty incidence of 36 percent. Increasing the amount of benefits in social assistance or state pension will not lead to significant poverty reduction. For example, raising the average state pension benefits from US$36 to US$50 per beneficiary per month will bring fiscal costs from US$5 million to US$8 million per month while poverty incidence would have fallen only from 36 percent to 34 percent. On the other hand, the proxy-means tested CMP and a well-designed and well-targeted herder-buyout program could potentially have larger poverty reducing effects per dollar of benefit to beneficiary (or per million US$ in fiscal costs). The reason is that these programs are by design targeted at only poor herders and poor households with children.

Figure 18: A simulation of fiscal costs and poverty incidences of various social programs



Summary findings and recommendations

Mongolia's social assistance programs that intend to assist the poor and the vulnerable suffer from large leakage to the non-poor and exclusion of the poor. Even social insurance programs (e.g., state pensions) also tend to exclude the poor. Thus, the impacts of public transfers on poverty reduction are extremely limited. It is disappointing to learn, as this report goes to print, that the Cabinet is planning to make the CMP, the first and only targeted program using a proxy-means testing formula, into a universal program for all households. While there may be political gains in making the CMP universal, this reversal perpetuates the existing problems of costly social assistance with little impact on poverty alleviation.

It is important to consider the option of channeling CMP benefits for street children to Trust Funds, perhaps at the premises (e.g., NGOs) where services (e.g., bath, meals) are delivered. If the CMP has continued to be a targeted program, it should be made the country's flagship program under which other related social assistance programs can be consolidated. Advantages for doing so include saving administration costs and fine-tuning the CMP to improve targeting effectiveness. Regrettably, at this juncture, CMP

looks to become one of the myriad of existing social assistance programs which does not effectively reach the poor.

One crucial barrier impeding public transfers and general public services from reaching the poor is the lack of an up-to-date National Identity Card among the poor population. This report recommends that (a) embedding the National Identity Card with a smart chip that stores important particulars of the individual; and (b) launching a country-wide campaign, with mobile registration stations to rural areas, to register and distribute to everyone including street children, free-of-charge, a smart chip-embedded National Identity Card should be Government priority actions in the immediate terms. It is important to recognize that the overriding purpose of this registration campaign is to reach out to the poor in remote locations and the vulnerable (e.g., the street children, and poor migrants) who otherwise will not have an opportunity to obtain an up-to-date National Identity Card to access basic services and government assistance.

Chapter Seven: Strengthening Institutions and Improving Implementation

- One common theme across various sectors is that public assistance of either cash transfers or subsidy is not reaching the poor and vulnerable as intended. This is a reflection of both implementation and institutional weaknesses.
- Other institutional weaknesses that hinder effective poverty reduction in Mongolia include (a) weakness in policy making, such as execution gaps and policy inconsistencies; (b) lack of transparency, such as the politicization of civil service and rising corruption; and (c) unevenness in fiduciary institutions and performance.

Introduction

Although Mongolia has relatively good indicators for governance compared to other transition countries, successive Mongolian governments have not been able to more effectively address the challenges of poverty and narrow based growth. In terms of policies, the government institutions were not sufficiently strong or flexible to mitigate risks for citizens. In rural areas, there has been a lack of provisioning for winter emergencies which resulted in the large-scale loss of livestock between 1999 and 2002. Emerging livelihood options, such as informal gold mining, have been left unregulated. The government has not found effective ways of dealing with the influx of people into the capital city in recent years.

There are three significant stumbling blocks emanating from the political economy and governance institutions that constrain effective poverty reduction: a) weakness in policy making, including policy instability and execution gaps; b) politicization of administrative organs and rising corruption, including threats of state capture; and c) unevenness in fiduciary institutions and performance.

Weakness in policy making: implementation gaps and policy inconsistencies

In general, transitions have been associated with broad legal and institutional changes across the former COMECON region and problems associated with policy stability and with consistency have not been uncommon as a result. In Mongolia, this problem has been compounded by the high degree of aid-dependency, a large number of donors active in the country, and weak donor coordination; the combination of relatively liberalized politics and limited institutional capacity also exacerbate the problem.

Draft laws are frequently developed on the basis of translating existing laws from other countries. This has implications for the internal consistency of the legal system. For example, the law governing public administration, the Public Sector Management and Finance Law (PSMFL), is based on the New Zealand model, while the administrative law providing rules for the interaction between citizens and the administration is based on German models. In the education sector, there has been little consistency in

policies over time. There are competing plans: a Masterplan developed under the leadership of ADB and another plan developed by UNESCO related to the Fast Track Initiative focusing on primary and secondary education. The Ministry has been slow to integrate these two plans. This is related to aid coordination problems in the sector, and also to wider problems of defining intergovernmental relationships and responsibilities

In a number of policy areas, there have been two or even three rounds of basic laws passed since 1990 (e.g. education, land privatization, etc.) but implementation is still lacking. Implementation is often undermined by not confronting and dealing with contradictions between policy shifts as well as the typical start-up inertia. Another example of weak implementation is in poverty monitoring. Details of the poverty monitoring system are in Annex IV. While a poverty monitoring system was in place by 2003 through the PRSP process and the government's commitment to achieving the MDGs, the system has not been functioning effectively. The Poverty Research Group (PRG) in the Ministry of Finance now assumes the leading role in poverty monitoring. However, there are only four staff at the PRG who rely on line ministries' monitoring units for inputs into the monitoring system. Often, the indicators received from line ministries are not appropriate for monitoring poverty and other development goals. It will be necessary to strengthen the capacity of PRG to generate necessary indicators and carry out some policy analyses. High-level ministry officials and policymakers often interpret "monitoring" as internal auditing or administrative oversight under the socialist regime, and not as the monitoring of policy outcomes to keep the government accountable for its citizens. Despite the availability of research and policy analyses, such information and recommendations is not fed into policy formulation.

Coordination of donor agencies is widely felt to be weak, even in sectors such as education for which Master Plans have been developed. Sector Wide Approaches and other instruments of coordination are not used in Mongolia. Effective coordination of donors and also of the activities of international NGOs (including religious organisations) is only possible if the government takes a lead. This poses challenges not least with regard to the distribution of power within government and in particular between the Ministry of Finance and the sector ministries as well as between different levels of government. Donors can be active in emphasizing the need for better coordination and can bring the experience of harmonization and coordination efforts in other countries.

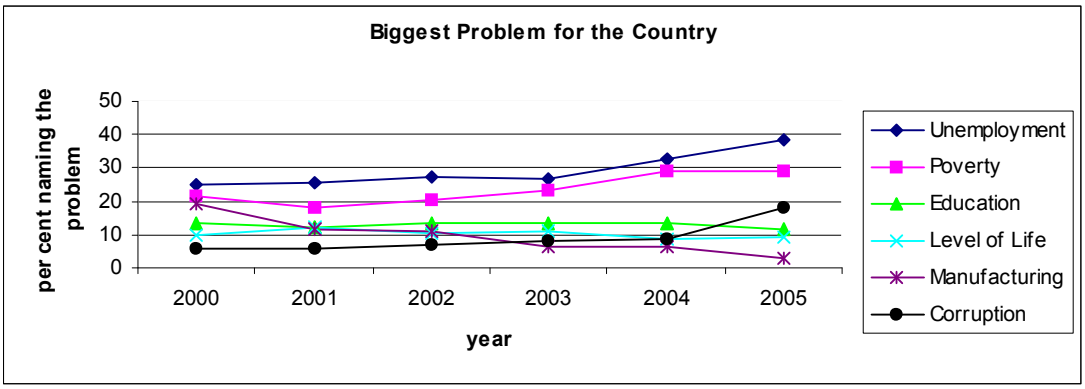
There is also too much policy emphasis on prestige-projects or large-scale changes – such as the currently planned administrative re-organisation, the Millennium Road, ICT initiatives or the introduction of new public management methods (PSMFL) across the country – and too little attention to complementary mid-level reforms that allow effective governance for poverty reduction at the grassroots level (e.g., school oversight boards).

Lack of transparency: politicization of civil service and rising corruption

Governance indicators compiled by the World Bank Institute (WBI) indicate that governance in Mongolia is better than in CIS countries but CIS tend to have the worst governance in particular with respect to the control of corruption relative to their levels of GDP.[31] In recent years, there has been a decline in the quality of governance in Mongolia, with regard to government effectiveness and the control of corruption. The governance challenges include a need to improve the quality of democratic decision-making (especially cross-institutional oversight), and overcome weaknesses in the institutional structure and policy processes. Poorer and rural citizens lack effective representation across all levels, leading to a democratic system in form but lacking substance and pro-poor outcomes.

Mongolian public opinion surveys reflect a growing concern about poverty, unemployment, and corruption. Currently, 20 per cent of the population (compared to 7 percent 5 years ago) regards corruption as one of the most serious problems of the country (see Figure 19). Mongolia's development partners have become increasingly concerned about these problems and as a result seek a deeper understanding of governance constraints. On the positive side, Mongolian governments and key institutions of the state still enjoy rather high levels of trust by citizens (in sharp contrast to the situation in CIS countries such as Ukraine or Russia).

Figure 19: Public opinion surveys show that unemployment and poverty are still seen as worsening problems.



Source: surveys, Sant Maral foundations, respondents could name two 'biggest' problems

The lack of transparency is also reflected in the government's reluctance to provide access to poverty data. Survey data should be made available to the public to

[31] There is a widespread presumption that the quality of governance is related to GDP levels. This is also broadly reflected in the WBI's governance indicators. The poor quality of governance in CIS countries relative to their level of development is likely to be related to the institutional and governance crisis of the post-communist period as well as to the communist legacy which fostered passivity and certain corrupt practices.

encourage open dialogues and constructive debates on poverty issues. Data transparency can also assist poverty monitoring in the country.

The civil service has been considerably expanded in recent years (Table 27), and has become heavily politicised during transition with a high turnover of civil servants with each change of government. The Government Action Plan for 2004 to 2008 addresses this practice and promises to create a merit-based civil service. A Civil Service Code and a Civil Service Commission exist, but are inadequate to protect the civil service from becoming politicized. The PSMFL which stipulates the formulation of performance contracts and partially performance based pay tends to be subverted by these practices since it opens the possibility that superiors evaluate political and personal loyalty rather than performance.

Table 27: Employees in public administration, education and health (in '000 persons)

	1992	1995	1999	2000	2001	2002	2003
Public admin. and defence	29.7	31.1	31.5	34.7	41.0	43.9	44.8
education	78.2	48.4	43.2	54.4	55.2	59.3	55.3
Health and social security	44.9	38.1	34.8	33.5	33.0	34.5	36.8
Civil Service wage bill in % of GDP		6.3				8.2	

Source: NSO; PEIR (2002)

How far the politicization has gone can be seen in the education sector – critical to long-term poverty reduction and also highly valued asset of Mongolian society.[32] Since 2000, local governors (*appointed* by the central government) can appoint school principals – and there is no requirement for these to have a professional background in education. Furthermore, the government has not been sufficiently flexible in reacting to changes related to migration (merging of schools, creating new schools in areas with high in-migration), which has left some areas severely under-serviced, a plight compounded by lack of effective voice. Insufficient donor coordination in the sector, frequent legal changes, and changes to budgetary rules have added to the problem.

More broadly, the political system is still in flux. New rules are currently being created or under debate (e.g. a new law on political parties, draft electoral law). The lack of an effective opposition and the permission of concurrent membership in parliament and in government mean that parliament does not act as an effective check on the executive. The programmatic bases of all political parties are relatively weak, and election campaigns have centred on rather populist promises (e.g. promise of doubling civil service pay and pensions in the 2000 parliamentary elections; promises of child allowances, subsidies to newlyweds and for new-born babies in the 2004 parliamentary elections) for addressing Mongolia's socio-economic challenges. Furthermore, there is an increasing overlap of political and business elites which increases the risk of state capture.

[32] Access to better quality education is frequently cited as a motivation for families' move to the capital city – which also means that the lack of good quality education in remote areas adds to the rapid rural-urban migration – which threatens to overwhelm service provision in urban areas.

Mongolia's governance problems are shared by other transition and developing countries. Privatization in a weak institutional environment has frequently involved and fostered corrupt practices.[33] Problems with establishing free but also professional media are widespread in both transition and developing countries. Furthermore, notions of social obligation, the use of patronage, and low pay—all of which vitiate against a merit-based civil service—are a common problem.

Unevenness in fiduciary institutions and performance

The above two challenges are both exhibited and compounded in a third element of governance weakness: uneven fiduciary institutions and performance. For example, while installation of GFMIS has resulted in better cash management, the procurement regime remains problematic.

For its level of development and institutional profile, Mongolia is managing cash payments (i.e., public transfers) quite well. The problem with regard to social payments in Mongolia is about registration and entitlements, and not about cash management. Given the level of development and the level of social support the state provides (pension and the Child Money, etc.) their fiduciary performance in these areas is actually good: cash is getting to the beneficiaries (losses more due more to mis-registration than corrupt leakage), the cash payment system is effectively managed via GFMIS at aimag treasuries and central treasury and all auditable payment trails are present.

The problematic aspect is public procurement. Above a certain amount of procurement, there is proper process and close scrutiny up to the award decision but little post-award checks. Even at the award stage, the final review and clearance by the State Secretary of Finance, who also chairs the inter-ministerial technical meeting places inordinate power in one person. He wields the power to delay final approvals and there is very little room for appeals and oversight. Under a proposed revision of the Procurement Act, the responsibility to review and award procurement contracts will be decentralized to the executing ministries, departments and agencies (including schools, for example) depending on certain thresholds, while Ministry of Finance will retain oversight through no objections and post award reviews.

In countries with relatively weak institutions (including discrepancies between formal and informal institutions) a high share of natural resource extraction is frequently associated with risks to governance.[34] The revenue implications of Mongolia's mining sector are not clear – production from the Erdenet copper mine is declining and a big

[33] Michael McFaul, "State Power, Institutional Change, and the Politics of Privatization in Russia," World Politics, Vol. 47 (1995), 210-43.
[34] Terry Karl, *The Paradox of Plenty*. Berkeley: University of California Press, 1997; Mick Moore and Lise Rakner (eds.) 'The new politics of taxation and accountability in developing countries', IDS Bulletin 2002.

new operation (Oyu Tolgoi) is only expected to enter into production from 2007/08 onwards and a stability agreement which will regulate the potential revenue flow from the mine is still under negotiation. If government can rely on a very limited number of mines or oil-wells to provide the bulk of revenue there is little need to respond to the demands of citizens more broadly and to provide a good overall business climate. Given the institutional and transition-associated pitfalls, this is a major concern to both quality of governance and, therefore, quality of pro-poor outcomes.

Recommendations

This report recommends that the government put a greater emphasis and develop concrete mechanisms to advance:

- implementation and consistency of policies;
- greater efficacy and transparency;
- reduction of civil service turnover after elections; and
- stronger leadership in donor coordination.

Specifically, this report recommends that the government fully implement and extend the provisions in PSMFL on the independence of the civil service to minimize election cycle turnovers, and develop mechanisms to enhance voice and accountability to citizens and other arms of government besides the executive (e.g. parliament) in order to fulfil growing demand for more efficient and responsive government action on priority areas.

It is also important for the government and donors to consider the risks to governance-from the revenue from natural resource extraction. The availability of such revenue can fuel rent-seeking behaviour, as well as fiscal irresponsibility (initiation of 'white elephant' projects).

Chapter Eight: Principal Recommendations

- Ensure consistent and comparable poverty estimates.
- Assist those relying on livestock to cope with risk, raise their productivity, or move to more sustainable livelihoods.
- Address weaknesses in implementation to improve targeting of national social safety net programs.
- Remove rural bottlenecks in the transition between lower and upper secondary education.
- Provide incentives to improve heating practices of the urban poor.

Ensure consistent and comparable poverty estimates in subsequent years

A comparison of the household surveys of 1998 and 2002-3 surveys suggests that there has been progress in poverty reduction. However, there are significant methodological differences between the two surveys, which limit the robustness of this finding. Moreover, much of the detailed survey data has not been released to the public, limiting our ability to undertake a more comprehensive analysis. NSO has implemented other surveys (e.g., Labor Force Survey; Reproductive Health Survey; Ulaanbaatar Migration and Poverty Survey) which can provide insights to various dimensions of poverty and allow comparison overtime to gauge progress of living standards of Mongolian population. Unfortunately, all data, including the LSMS 1998 and the HIES-LSMS 2002-3 remain inaccessible to the public. This is a serious concern. This report recommends that all survey data be made available to the public to promote in-depth analyses and constructive debates of important policy issues.

Furthermore, to ensure comparability across time, this report recommends that future LSMS and the HIES adopts the 2002 HIES-LSMS design. In addition, the NSO should review the sampling frame of Ulaanbaatar to ensure that new *ger* settlements and the influx of migrants from the aimags in recent years are included. It is also recommended that NSO harmonizes its annual HIES and donor-funded LSMS by including a core set of questions from the LSMS into the HIES and having rotating modules with different topics each year. This harmonization can be achieved with budget neutrality with the important implication that future Surveys for poverty monitoring should be carried out by the NSO without reliance on donor funding.

Assist those relying on livestock to cope with risk, raise productivity, or move to more sustainable livelihoods

While shocks, such as widespread *dzuds* or drought are undeniably an important source of livestock mortality, idiosyncratic or highly localized factors are also critical in determining the incidence of livestock mortality at the household level. Policies to help herder households have to go beyond interventions/responses that are triggered by catastrophic events. Public action is needed on an ongoing basis to help households

cope with livestock mortality shocks that are highly localized, perhaps even limited to individual households, and should include both ex-ante risk-reducing measures and ex-post schemes that are targeted at the household level.

Furthermore, there is a core group (about 26 percent) of chronically poor herder households—distinguished by large families and very small herds—that warrants government's assistance. The consensus in Mongolia is that this group of chronically poor herder households lacks the necessary herding skills and should leave the livestock sector. Their herd size is too small to make a living and herd improvement is too expensive for small herd sizes; furthermore, they are contributing to over-grazing of close-in areas. Alternative sources of income need to be identified and developed for this group of herders. An option to consider is a herder-buyout program. However, a well-designed herder-buyout program that avoids all the associated problems of moral hazard is not an easy task. Further analyses will be needed to assess if a herder buyout program is a viable option for Mongolia. Other options to keep these herders out of the livestock sector include an improvement of the rural investment climate and strengthening supply chains for livestock-based activities. A recently available source of livelihood in rural areas is artisanal mining. While the government has moved away from prohibition to regulation of artisanal mining, the draft law on artisanal mining in its current wording has to be revised to effectively make the activity a positive development for the rural poor.

Address weaknesses in implementation to improve targeting of national social safety net programs

The impacts on public transfers on poverty reduction are extremely limited because of their non-targeting nature. It is disappointing to learn, as this report is going to print, that the Cabinet planned to make the CMP, a first and only targeted program using a proxy-means testing formula, into a universal program. While there may be political gains in making the CMP universal, this reversal perpetuates the existing problems of costly social assistance with little impact on poverty alleviation. If the CMP has continued to be a targeted program, it should be made the country's flagship program under which other related social assistance programs can be consolidated. Advantages for doing so include saving administration costs and fine-tuning the CMP to improve targeting effectiveness. Regrettably, at this juncture, CMP looks to become one of the myriad of existing social assistance programs which does not effectively reach the poor.

One crucial barrier impeding public transfers and general public services from reaching the poor is the lack of an up-to-date National Identity Card among the poor population. This report recommends that (a) embedding the National Identity Card with a smart chip that stores important particulars of the individual; and (b) launching a country-wide campaign, with mobile registration stations to rural areas, to register and distribute to everyone, free-of-charge, a smart chip-embedded National Identity Card should be Government priority actions in the immediate terms. It is most important to recognize that the overriding purpose of this registration campaign is to reach out to the poor in

remote locations and the vulnerable (e.g., the street children, and poor migrants) who otherwise will not have an opportunity to obtain an up-to-date National Identity Card to access basic services and government assistance.

Remove rural bottlenecks in the transition between lower and upper secondary education

Attrition rates at the end of lower secondary level are extremely high among poor rural households and significantly higher than other groups. One important factor is poverty. Other equally critical factors are lack of access in rural areas and worse educational quality. The report recommends that options such as reopening Grades 9 and 10 in rural schools; expanding dormitory spaces in aimag schools; and targeting dormitory subsidies at poor rural households be considered and implemented to improve access for rural children. In addition, the report urges that incentives embedded in teacher compensation packages be re-aligned to attract teachers and staff to rural schools and that central resources be allocated to favor rural schools. This report's recommendation for a universal campaign to distribute National Identity Cards to all citizens is also relevant for improving educational opportunity for all and in particular, for ensuring that migrants' children from poor households have access to schools.

Provide incentives to improve heating practices of the urban poor

In the *ger* areas of Ulaanbaatar, the poor spend at least one-fifth of their total consumption on heating fuels over winter months and to economize, they burnt dirty fuel. The social costs of cheaper and dirtier fuel (e.g., health costs, productivity losses and environmental damage) are huge, justifying some forms of public-sector intervention.

To address the heating needs of the poor as well as negative externalities, this report recommends that a scheme for trading in inefficient stoves in exchange for efficient stoves in the *ger* districts of Ulaanbaataar be considered. This trade-in scheme has to be implemented with an information campaign about the benefits of efficient stoves. In particular, the poor must recognize the significant cost-saving from sustained reduction of heating fuel from an efficient stove. To target only at the poor, the authorities can make this trade-in scheme a public works project whereby efficient stoves are given out in exchange for a fixed hours of community service, such as garbage collection and street sweeping in the *ger* districts in addition to the requisite of trading in an existing inefficient stove. To discourage production and sale of inefficient stoves, the authorities also need to heavily levy a tax on inefficient stoves and subsidize efficient stoves.

Annex I: Survey Methodology

Overview of the HIES-LSMS

The 2003 Living Standard Measurement Survey (LSMS) design has the peculiarity of being a sub-sample of a larger survey, namely the Household Income and Expenditure Survey (HIES). Instead of administering an independent consumption module, the LSMS depends on HIES information on household consumption expenditure. This is why the survey is referred as HIES-LSMS. The HIES-LSMS is the only source of information of income-poverty, and the questionnaire is designed to provide poverty estimates and a set of useful social indicators that can monitor more in general human development, as well as more specific issues on key sectors, such as health, education, and energy.

The HIES interviewed 11,232 households which were equally distributed in four quarters over the period of one year (from February 2002 to January 2003). In fact the HIES collected monthly consumption information for each household in three consecutive months (quarters)[35]. Each month, the interviewer left a diary with the household to be used to record all types of expenditures and consumption deriving either from purchases or from own production, gifts, and barter exchanges.

The LSMS households are a subset of the household interviewed for the HIES: one third of the HIES households were contacted again and interviewed on the LSMS topics. The subset was equally distributed among the four quarters. At the planning stage the time lag between the HIES and LSMS interviews was expected to be relatively short. However, for various reasons it is on average of about 9 months, and for some households more than one year. Households interviewed in the first and second quarter of 2002 were generally re-interviewed in March and April 2003, while households of the third and fourth quarter of 2002 were re-interviewed in May, June and July of 2003. The considerable time lag between HIES and LSMS interviews was the main responsible for a considerable loss of households in the LSMS sample, households that could not be easily relocated and therefore re-interviewed. Due also to some incomplete questionnaires, the number of households that were used for the final poverty analysis is 3,308.

In conjunction with LSMS household interviews the National Statistics Office also collected a price and a community questionnaire in each selected soum. The latter collected information on the quality of infrastructure, and basic education and health services.

The sample design

The HIES, and consequently the LSMS, used the 2000 Census as sample frame. 1,248 enumerations areas were part of the sample, which is a two-stage stratified random

[35] An important exception is the 'first quarter' made up of February 2002, March 2002 and January 2003.

sample. The strata, or domains of estimation, are four: Ulaanbaatar, *aimag* capitals and small towns, *soum* centers, and Countryside. At a first stage a number of Primary Sampling Units (PSUs) were selected from each stratum. In the selected PSUs enumerators listed all the households residing in the area[36], and in a second stage households were randomly selected from the list of households identified in that PSU (10 households were selected in urban areas and 8 households in rural areas)[37]. The use of this sampling procedure means that households living in different areas of the country have been selected with differing probabilities. Therefore, in order to obtain representative statistics for each of the strata and for Mongolia, it is necessary to use sampling weights. These weights are applied to each household and correspond to the inverse of the probability of selection, calculated taking into account the sampling strategy.

Data quality

If we exclude the problems encountered in some field operations in the selection of households[38], the overall data quality is to be considered of good standard. In fact, the data entry program implemented a considerable number of in-built consistency checks that alerted the data entry operator whenever some clear inconsistency was found in the data. This helped to prevent errors and raised the overall quality of the data. At the analysis stage the dataset was also checked for internal consistency and the number of corrections were overall of a limited amount: excessive expenditure values were checked against the paper questionnaire and corrected whenever a data entry mistake was found.

More generally some comparisons have been made to check whether the HIES-LSMS sample is indeed representative of Mongolia. The age-group population distribution and the sex ratio for these groups have been compared with those of the 2000 Census data Overall discrepancies seem to be within an acceptable range. Even though the sample was not designed to provide estimates at the regional level, population shares of the HIES-LSMS sample are very close to those of the Census . It is also important to mention that the LSMS captures only a very limited number of migrants. Migrants in the LSMS are much less than what Census data suggest. This could have been the result of an under sampling of areas with concentration of recent migration[39] or some inaccuracies in the collection of migration data. If recent migration was indeed under-

[36] However, in some instances, there are indications that the listing operations may not have been exhaustive. Probably, in some cases only officially registered households were listed. This might well explain the low proportion of migrants estimated using the LSMS sample (see section 1 of the main report).

[37] Again, in some cases there might have been some problems in the field operations, as there is evidence that in about 10 percent of the cases households were not selected using information from the listing operation, but some other criteria.

[38] Unfortunately, it is impossible to assess what is the actual implication of the non-compliance with the sample selection instruction, but one clear and quantifiable effect is definitely the reduced sample size (3,308 households from the originally planned 3,744).

[39] To support this hypothesis is the fact that listing operations in some primary sampling units might have only considered officially registered households.

represented, there are reasons to believe that this in turn might have underestimated the level of poverty. In fact, it is likely that recent migrants might be poorer than the rest of the population.

Specific Items: Education and Energy

Education: there are three issues to consider. First, some argue that if education is an investment, it should be treated as savings and not as consumption. Benefits from attending school are distributed not simply during the school period but during all years after. Second, there are life-cycle considerations, educational expenses are concentrated in a particular time of a person's life. Say that we compare two individuals that will pay the same for their education but one is still studying while the other finished several years ago. The current student might seem as better-off but that result is just related to age and not to true differences in welfare levels. One way out would be to smooth these expenses over the whole life period. Third, we must consider the coverage in the supply of public education. If all population can benefit from free or heavily subsidized education (as it happens in Mongolia) and the decision of studying in private schools is driven by quality factors, differences in expenditures can be associated with differences in welfare levels and the case for their inclusion is stronger. Standard practice was followed and educational expenses were included in the consumption aggregate. Excluding them would make no distinction between two households with children in school age, but only one being able to send them to school.

Energy: Both surveys provide information on energy, but the LSMS is the one that contains a very comprehensive and detailed module, hence it is likely to be much more accurate than the corresponding HIES section. Electricity and lighting expenses offered no problems for their inclusion in the welfare indicator. Heating was a different case. Heating is provided to households from either central or local systems or simple heating units fueled by firewood, coal or dung. While information on the former was appropriately captured, the latter presented a few complications. The questionnaire collected data on average purchases (expenditures and quantities) and collection (quantities) per winter and non-winter month for those three main sources of fuel. First, to value consumption coming from collected fuel, unit values for each one of the three main fuels were applied to their respective collected quantities. In urban areas, where most fuel is purchased, unit values were estimated from actual purchases recorded in the LSMS following a similar procedure as in the case of valuing food collection. In rural areas tough, where most fuel is collected and there is no market for fuel, the same method will likely overestimate the value of consumption (Since no transactions are registered at the cluster level and very few at the aimag level, unit values are probably drawn from urban areas). Information on household fuel consumption was gathered from several aimag statistical offices and unit values were obtained from there[40].

[40] Unfortunately, this was not a proper and systematic survey covering all areas, so in order to minimize the potential bias, median unit values by stratum were considered for valuation purposes. These values were as follows: one cubic meter of wood was Tugrug 2,500 in soum centers and 1,450 in the countryside; one kilogram of dung in both strata was 2.5; and one ton of coal was 6,500 in soum centers and 5,500 in the countryside.

Second, given that the recall period was the last year, we needed to make an assumption on the duration of winter and non-winter seasons in order to arrive to a monthly figure. It was assumed that each season lasts on average 6 months.

However, monthly figures appeared to be too high, especially in the case of purchases. A close look at them revealed that, although questions referred to a monthly reference period, households apparently reported in many cases seasonal rather than monthly expenditures. An explanation for this is the fact that people often buy these fuels once or twice for the whole season and it was easier for them to report the expenditure as such[41]. The solution to this data problem consisted in establishing a reference table with average and maximum fuel consumption for winter and non-winter seasons. These cut-off points allowed us to distinguish cases in which the household reported seasonal instead of monthly figures.

Differences across LSMS surveys: 1995, 1998 and 2003

The 2002-2003 HIES-LSMS was implemented using an improved methodology in the selection of the sample using the information of the recent Census, instead of administrative data. The sample selection methodology followed recognized international standards and its results are deemed to be properly representative of the country situation. However, its main results are not directly comparable with those of previous LSMS (1995 and 1998).[42] The methodology used to estimate poverty is different and dependent on the dissimilar characteristics of the surveys. Therefore, problems of comparability cannot be resolved, and the welfare indicator used for poverty analysis as well as the relevant poverty line are different. Difficulties in inter-temporal analysis are compounded by restrictions on the public availability of the full survey data.

[41] The same situation arose in at least another recent LSMS, so it seems that there is a lesson to be learned that goes beyond the case of Mongolia.

[42] Other important differences between the 2002/03 HIES/LSMS and the previous LSMS surveys concern the overall sample design: field procedures, interview structure and questionnaire. Nonetheless, some analysis was undertaken to see the extent of comparability of a modified consumption aggregate, which contained as much as possible similar components, between the 1998 LSMS and the 2002/03 HIES/LSMS, and between the 1999 HIES and the 2002/03 HIES/LSMS. In both cases it emerged that the datasets are not comparable, and that the problem does not lie in the theoretical content of the consumption aggregate, but on how (recall period, sampling procedures) and when (during the year) households' information about consumption expenditure was collected.

Table A1: Comparing the Surveys

	1995	1998	2002/03
Survey	LSMS	LSMS	HIES + LSMS
Field Period	June-July	June-July	February 2002 – July 2003
Sampling			
Frame	No documentation; it is likely to be based on a 5-region government classification: Western, Middle, Eastern, Southern, and Central.	Government classification of 6 regions based on petrol prices: Western, Middle, Eastern, Southern, Central excluding UB, and UB.	2000 National Census
Design	Three-stage sample. First, 6 aimags were selected as being representative of the 5 regions in the country (not clear how). Second, soums were selected from each aimag (not clear how either). Finally households were selected from both urban and rural areas within each soum.	Three-stage sample. First, 9 aimags were selected as being representative of the 6 regions in the country (the same 6 aimags selected in 1995 were kept and 3 more were added). Second, soums were selected from each aimag (based on distance to the aimag center). Finally households were selected from each soum based on an income-quintile classification.	Two-stage stratified random sample. Primary sampling units (PSU) were first selected from each stratum (UB, aimag centers, soum centers and countryside) based on probability proportional to size, and then households were randomly selected from each PSU (each with equal probability).
Weight	Weights replicate the population, disaggregated by urban/rural, only for the 6 aimags considered. It is assumed that they are representative of the 5 main regions of the country, and hence of the whole country.	No	Yes
Representativeness			
National	Uncertain	Uncertain	Yes
Urban/Rural	Uncertain	Uncertain	Yes
Coverage	UB + 5 aimags	UB + 8 aimags	UB + 21 aimags
Sample (households)	1500	2000	3308
Questionnaire			
Questionnaire per household	1	1	4
Num of food items	26	40	92
Recording method (food)	Recall of last 12 months	Recall of last month	Diary covering a 3-month period
Num non-food items	52	56	242
Recording method (non-food)	Recall of last month and of last 12 months	Recall of last month and last 12 months	Diary covering a 3-month period

Table A2: Comparable consumption aggregates for both LSMS 1998 & HIES-LSMS-2002/3

1	food	Food
2	v1	Clothing
3	v2	Cloth, cotton
4	v3	Small goods, sewn & woven goods, hh dishes
5	v4	Beauty articles, cleaning powder, soap
6	v5	Hairdressers, photo, dry cleaning, shoe & clothing making & repair
7	v6	Entertainment
8	v7	Auto, motorcycle, bike, taxi, fuel, gasoline
9	v8	Communication
10	ed11	Total reported
11	ed12	Tuition & fees
12	ed13	Room rent
13	ed14	Transport
14	ed15	Books & supplies
15	ed18	Scholarships
16	h1t	Transportation first visit
17	h1h	Hospitalization first visit
18	h1c	Consultation first visit
19	h2t	Transportation second visit
20	h2h	Hospitalization second visit
21	h2c	Consultation second visit
22	h3t	Transportation third visit
23	h3h	Hospitalization third visit
24	h3c	Consultation third visit
25	h4t	Transportation fourth visit
26	h4h	Hospitalization fourth visit
27	h4c	Consultation fourth visit
28	hmed	Medicines

Annex II: Types of Social Assistance

The Law on Social Welfare (article 12) elaborates the criteria for granting social assistance. Social welfare in Mongolia is broadly classified into three groups:

- Social welfare pensions for vulnerable people who are not entitled to social insurance;
- Maternity allowances and allowances for child support;
- Subsidies, in the form of discounts for goods and concessions.

Social welfare pensions

Poor old	very poor men aged 60+ and women aged 55+, who are unable to maintain themselves, with no children or relatives to support them; or who are legal dependents of the elderly or disabled or those certified as being unable to support them.
Disabled	those who are 70 percent incapacitated, or those who have reached the age of 16 and have been 50 percent incapacitated before the age of 16.
Fully disabled	fully blind, dumb or deaf people and dwarves.
Single parents	very poor single parents (mothers aged 45+ and fathers 50+) who are heads of households and have four or more children.

Maternity allowances and allowances for child support

Pregnancy:	Allowances for pregnancy and delivery for mothers who are not entitled to pregnancy and delivery from the social insurance scheme.
1st year child care	Child care allowance for care-givers of children aged less than one year (two year in the case of twins), if the child care-givers are not employed, are employed but have an income below the minimum living standard, or are a student.
Many children	A onetime allowance for giving birth to the fourth child while caring for three other children. For raising five or more children a monthly allowance is granted.
Care topping	mothers or care-givers from very poor families are eligible to a one-time infant care allowance on top of the regular childcare allowance.
Twins	an additional one-time allowance is granted for giving birth to and raising twins or multiple children.
Full orphans	An allowance for adoption of and bringing up full orphans.

Subsidies – social welfare services for the disabled

House rent	Those households accommodating a disabled person and where the total household income is below the minimum living standard are eligible to receive discounts on house rents.
Heating	Those households accommodating a disabled person and where the total household income is below the minimum living standard are eligible for discounts on fuel.
Childcare	A discretionary monthly payment may be made to one carer of a disabled child who is under 16, from a very poor household and who requires permanent care.

Subsidies – concessions for the poor elderly

House rent	The elderly (and certain specific categories not observable in the data) with a household income less than the minimum living standard are eligible for a discount on the house rent.
Heating	The elderly (and certain specific categories not observable in the data) with a household income less than the minimum living standard are eligible for a discount on fuel.

Annex III: *POVSTAT toolkit* – projections of poverty estimates based on macroeconomic data

PovStat uses per capita consumption as the measure of individual welfare in calculating poverty measures and other projected indices. The starting point is that per capita consumption for a household is assumed to grow at the same rate as per capita output in the sector of employment of the household head. The technical details underlying the calculations run by PovStat are spelt out below.

Let us first introduce some notation:

- per capita consumption for *n* sample households in year *t*, $\{c_{i,t}\}_{i=1}^{n}$, where *t=0* represents the survey year,
- a set of individual weights for each of these households in year *t*, $\{w_{i,t}\}_{i=1}^{n}$; for the survey year, these represent the product of the inverse of the probability of selection of the household in the survey and its household size, and
- the sector of employment of each household's head in the survey year $\{s_i\}_{i=1}^{n}$; while the sector of employment for a sample household is fixed, we allow for population shifts across sectors.

Sector of employment

Note that the sector of employment s_i is a categorical variable that takes a value between 1 and 4 inclusive. Sectors 1 to 3 represent the agriculture, industry and services sectors respectively, sector 4 represents a residual sector. The residual sector is introduced to capture cases where the head of the household either does not participate in the labor market or is unemployed or his sector of employment is listed as "other/not available/unclassified". In all these cases, instead of throwing that household out of the sample, we group these households under a residual sector. Per capita consumption in this sector is assumed to increase at same rate as the projected growth rate for per capita GDP.

Person weights

Note that the weights for the survey year have been rescaled to add up to the user-specified survey year total population.

Per capita consumption

Per capita consumption $\{c_{i,t}\}_{i=1}^{n}$ is per capita consumption per month. It is expressed in local currency units at survey year prices if a national poverty line is used.

If however an international poverty line is used, it is expressed in *base year* USD using *base year* PPP for the country in question. This is done by using an adjustment factor (*AF*) as follows:

$$AF = \frac{1}{PPP_{BY}} \cdot \frac{CPI_{BY}}{CPI_{SY}},$$

and then constructing

$$c_{i,0} = c_{i,0}^{L} \cdot AF \quad ,$$

where CPI_{BY} and CPI_{SY} are the consumer price indices for the base and the survey years respectively, and $\{c_{i,0}^{L}\}_{i=1}^{n}$ are the original local currency data on per capita household consumption obtained from the survey. AF is set equal to 1 if using national poverty lines.

Basic projections

For each of the projection years, per capita consumption is defined recursively

$$c_{i,t} = c_{i,t-1}(1 + g_t^{S_i} - \eta_t^{S_i}) ,$$

where $g_t^{S_i}$ is the user-specified real GDP growth rate for the sector of employment of person *i* in year *t*. $\eta_t^{S_i}$, the population growth rate in that sector in year *t*, is given by:

$$1 + \eta_t^{S_i} = \frac{\varepsilon_t^{S}}{\varepsilon_{t-1}^{S}} \cdot (1 + \eta_t) , \text{ for sectors 1, 2, and 3,}$$

where η_t is the user-specified total population growth in year *t*, and ε_t^{S} is the share of sector *S* in total employment at time *t*, and is itself defined recursively as

$$\varepsilon_t^{S} = \frac{\varepsilon_{t-1}^{S}(1 + \tau_t^{S})}{\sum_{k=1}^{3} \varepsilon_{t-1}^{k}(1 + \tau_t^{k})}$$

where τ_t^{S} is the user-specified growth in employment in sector S in year t. Note that survey-year employment shares ε_0^{S} are also specified (as percentages) by the user.

Population in the residual sector 4 is assumed to increase at the rate of overall population growth, i.e.,

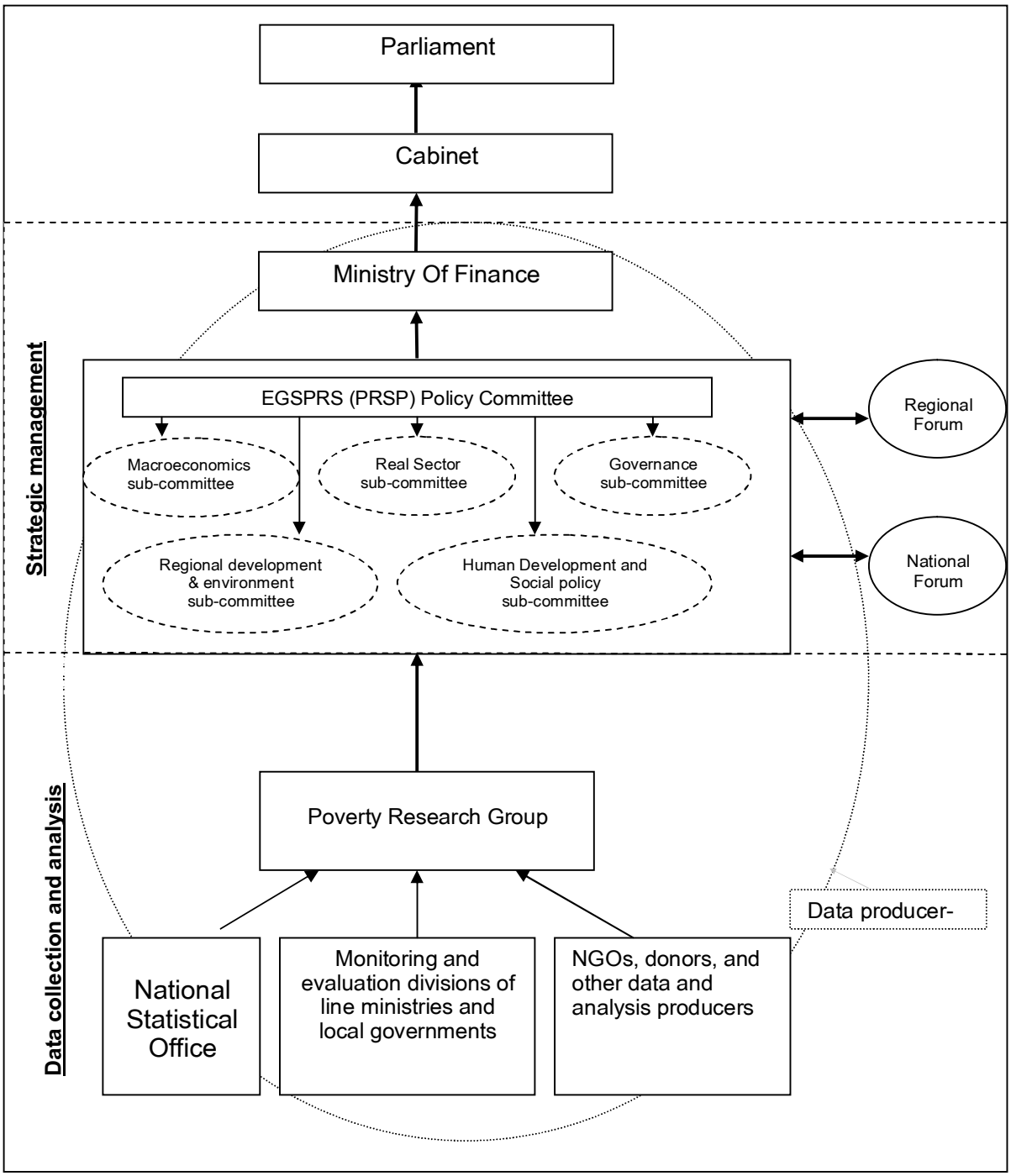
$$\eta_t^{4_i} = \eta_t ,$$

The individual weights are also defined recursively using

$$w_{i,t} = w_{i,t-1}(1 + \eta_t^{S_i}) \bullet$$

Annex IV: Poverty Monitoring System

There was no poverty monitoring system before 2003. By April 2005, the Parliament issued a resolution (Num 25) which requires reporting of progress of Millennium Development Goals (MDGs) at the national level ever 2 years. Poverty monitoring mechanism is represented in the following chart.



UNDP recently initiated (February 2006) a system-wide project to improve Mongolia's ability to monitor development in order to achieve MDGs and other national development goals. The new UNDP project "Pilot Project to Support the National Poverty and MDG Monitoring and Assessment System (PMMS)" aims to support the establishment of a comprehensive, integrated, and decentralized system of monitoring and assessment to achieve poverty reduction gorals and MDGs, and to promote the use of monitoring information for policy purposes. The project consists of 7 components, which are 1) the overall coordination of the system with its various stakeholders; 2) regular results monitoring of MDGs, Economic Growth and Poverty Reduction Strategy (EGPRS), and the Government Action Plan; 3) MDG localization through local-level participatory poverty monitoring; 4) capacity development for policy analyses and impact assessment on human development; 5) linking national goals to the budget process; 6) development of a poverty monitoring information system; and 7) communication and advocacy of key monitoring results.

The current practice in Mongolia to monitor poverty and other development goals has been well summarized in the project document43. In particular it provides the following observations:

- ***The key problem of poverty monitoring in Mongolia is the absence of a coordination mechanism among key actors that produces information useful for decision-making purposes.*** The central problem is not a lack of data per se, nor lack of indicators, although some data gaps still exist.
- ***There is a disconnect between planning and budgeting processes, and budget allocations are not made in a transparent manner.*** There is a also disconnect between national and local government in their planning and monitoring processes**.** For example, local government strategies and plans are only remotely related to the Government Action Plan set at the national level.
- ***The involvement of beneficiaries of poverty reduction activities—civil society organizations (CSO) and community-based organizations—is lacking in the process of monitoring and assessing poverty.*** While CSOs are represented in a number of working groups within the existing EGSPRS monitoring system, there is no systematic use of participatory monitoring within the system. There is a clear need to establish a mechanism to coordinate CSO-based participatory monitoring activities and more generally, to facilitate data analysis, dissemination, and dialogue on poverty-related matters among CSOs.

In addition to the above observations provided by the UNDP project document there are few additional matters that require attention:

- ***Currently, the main drive for poverty monitoring comes from the donors, rather than the government or the civil society in Mongolia, and the political will to implement a performance-based management system (reflected in the Resolutions to pursue and monitor achievement of the MDGs) has had limited practical effects.*** Most of the ministries' monitoring divisions have been

[43] Government of Mongolia and United Nations Development Programme Mongolia (2005), *Pilot Project to Support the National Poverty and MDG Monitoring and Assessment System (PMMS).*

significantly downsized when the new government came into power in 2004, and senior management of the ministries and politicians mis-interpret the term "monitoring" to be internal auditing or administrative oversight under the old socialist regime, and not as the monitoring of policy outcomes to keep the government accountable for its citizens.

- ***There is very little interaction between the Cabinet and the line ministries that feeds into policy revisions.*** For example, the Cabinet has recently approved a revision to the criteria for selecting families qualified to receive Child Money benefit. The revision from families with three or more children too all families with at least 1 child makes the program less targeted. If the Ministry of Social Welfare had the opportunity to present the outcome to the Cabinet on time, and the Cabinet was able to take the results into consideration, a different (and possibly more efficient) policy decision would have been made.

- ***A lack of access to micro (household) level data produced by the NSO is hampering an effective poverty monitoring by policy-makers and other stakeholders.*** There is a need for the NSO to provide a clear guideline and procedure for the micro data dissemination practice to the data users. In addition, most of the line ministry monitoring divisions were not aware of DevInfo – a central repository of indicators managed by the NSO to disseminate data that are collected across sectors.

Given the above circumstances in Mongolia, the following priority actions are recommended to establish an effective poverty monitoring system in Mongolia:

- Raising awareness for the performance-based management system for senior officials including the President, the Prime Minister, the Cabinet Members, and the senior management of the line ministries. Unless there is change in the mentality and the understanding about the system of monitoring development progress, it would not be owned by the country and would not be sustainable.

- Harmonization and consolidation of various national development plans—GAP, EGSPRS, and MDGs—need to continue so that short-term action plans are linked to long-term goals, and sector programs are consistent with the overall poverty reduction strategies. Such harmonization and consolidation should result in an integrated national poverty monitoring plan.

- Efforts to encourage CSOs and the local universities to do more policy analysis that would feed into the EGSPRS/MDG progress reports. Local level participatory monitoring capacities need to be strengthened at the same time.

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